

GREAT LAKES TECHNOCRAT

25c

JANUARY-FEBRUARY, 1944

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GREAT LAKES TECHNOCRAT

JANUARY-FEBRUARY, 1944 ★ VOL. II ★ No. 8 ★ WHOLE NO. 65

★ Illustrating the Futility of Price System Methods of Operation; Interpreting the Trend of Events from the Social Aspect of Science; and Presenting the Specifications for Total Victory in America's War Against Fascism. ★

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War-Time Chiseling A La 'Free Enterprise'*

by R. F. Novalis

Three Deadly Parallels

Fat War Profits	Slim War Industry Operations	Growing War Casualties
Profits, over taxes, of all corporations during defense and war production years of 1941-42-43 are estimated at \$24.2 billions, by Randolph Paul, general counsel of the Treasury Department. Of this, \$19 billions were made in war materiel contracts. First quarter profits of all corporations this year, after taxes, were 18 percent above 1942 first quarter levels.—U. S. Dept. Commerce.	America's Railroads—37% of freight cars moved are empties; 48% of passenger car seats unoccupied. America's steel mills—operating at estimated 43% of potential capacity. America's 250 largest war-plant contractors admit only 16% of them now at capacity operations!	Washington, Nov. 11, 1943 —Total Casualties to United States forces since Dec. 7, 1941, numbered today 121,000. This includes 25,389 dead. . . The coming European offensive may bring losses 'so heavy that they will be felt in every town and every village in the United States,' warned Maj. Gen. George V. Strong, Asst. Chief of Army Intelligence.

LAST February the WPB, made up almost entirely of business men, admitted that 70 percent of all war contracts were in the hands of 100 manufacturing corporations. That month Senator Harry Truman said:

The largest business monopoly in the history of the world has been created in the War and Navy Departments and the WPB. It has placed thousands of its representatives in key positions in Washington, so that today, the purchasing power of our government is funneled into the big corporations.

This situation was virtually unchanged this September, when Col-

*Note: Italics Ours.

onel Bryan Houston, now OPA Deputy Administrator, stated in Chicago that 85 percent of all war contracts were held by 400 manufacturing corporations.*

The corporations have made \$19 billion clear profits out of the war so far, but even if they were motivated by the highest patriotism they could not have operated America's technology at the high order of efficiency called for to achieve victory sooner—much sooner than it will be achieved. The fact that our productive capacity has not operated at full efficiency, and why, is shown by an investigation, of the facts.

* Note that the 400 largest corporations of the country normally get almost 20 percent of all profits after taxes, and that 20,000 people are paid 33 per cent of all dividends issued.

This much is certain, that business was not deprived of the opportunity to go 'all out' in achieving the maximum efficiency in the war effort. It was, on the contrary, given every opportunity to do so. Industrially, this was unavoidable, for the corporations have most of the technology of the country, in an extremely uncoordinated form. Financially and administratively it was not necessary, indeed almost calamitous, to give business carte blanche in producing America's requirements for war under the anarchic methods of business-as-usual at a profit. Here is a partial record of industry's 'war effort.'

Is 16 percent Good Enough for America?

The most amazing industrial news of the war was contained in the Sept. 1943 issue of *Mill & Factory*, a magazine published by and for corporate industry:

*A telegraphic survey of the nation's 250 largest prime contractors holding the bulk of America's war production, shows that only 16 percent are operating at full capacity.**

The plants working all-out-capacity do number in the thousands but these represent only the small factory and garage subcontractors, whose contribution, however necessary in some cases, is trifling compared with the total output needed or delivered.

At the same time the September

* 'Capacity' was defined as being the point at which it is impossible to increase production.

issue of two other business magazines, *Steel* and *Iron Age*, revealed that \$1 billion worth of brand new machinery and equipment, numbering 55,000 types, has not yet been installed. Of this number, 10,000 are machine tools. Here are some examples of the war 'efficiency' of the system of 'free enterprise':

Railroads

'The railroads are carrying about all the traffic they can handle.' Leonard Ayres, economist and vice president of the Cleveland Trust Company, Sept. 15, 1943.

The nation's 1,700,000 freight cars are carrying 2,000,000,000 ton-miles of goods daily, mostly war materiel, at 'capacity.' What is their capacity, though? Even the American Association of Railroads' Car Service Division admits that 37 percent of freight car mileage is *empty*, (9/43). What is more, one-fifth of the average *loaded* car's capacity is not being used, also from A.A.R. data. And last March, only 52 percent of railroad passenger-car capacity was used. (Interstate Commerce Commission). *Steel*

Last January the Division of Information of the WPB stated that iron and steel plants were utilizing their productive equipment only 71 hours a week, or 42 percent of potential capacity based on the 168 hours in a week. At that time the American Iron and Steel Institute said the industry was 'at 97 percent' of capacity. By August it had advanced only to '98 percent,' so the mills' ma-

chinery is *still* idle more than half the time.

Coal—Electricity—Airplanes

The nation's bituminous coal mines were operated last year at only 72 percent of their capacity figures, on a 365-day year basis.

The electric power stations produced 188 billion kilowatt-hours, when on a 365-day basis (theoretical because only .90 or .95 is practical) generation would have been 405 billion kw-hrs, or 54 percent more.

In October 1942, nearly a year after Pearl Harbor, U. S. air frame factories were operating their production equipment only 91.4 hours a week (out of 168 available hours), according to the WPB.

All Industry

The Business Trend: Getting Tougher as Operations Near Capacity. *Steel Magazine*, Sept. 13, 1943.

Industry Appears to Have Reached the Saturation Point of Its Productive Capacity. Leonard Ayres, Sept. 13, 1943.

Output Ceiling Believed Near. The country is approaching the ceiling of its productive capacity, the National City Bank of New York reports in its monthly letter. *Chicago Sun*, Oct. 5, 1943.

The above were buried in the financial pages of the daily newspapers, while simultaneously front pages carried accounts of the first big land battle between Allied and German forces in Italy, as well as quotations from war agency officials stating that *more*, not less, fighting

equipment will be needed from now on to drive the war into our enemy's homeland.

In spite of WPB's exhortations, war production is leveling off. In July 1943, it faltered and fell behind its schedules *for the third consecutive month*. To experts that means it is pushing against a ceiling. This ceiling threatens to come 6 months sooner than WPB expected. If it comes, *it will clamp a lid on output* about 20 percent or more *below the peak rate which present plans demand*. *Business Week*, 8/14/43.

Again in Sept. 1943 business failed to measure up to its 'responsibilities' for Charles E. Wilson, acting WPB chairman, was quoted in the October 28 *Iron Age* as saying: 'September overall munitions production was approximately the same as for August and cannot be regarded as anything but disappointing.'

A few months ago the problem became so serious that officials began making appeals openly to the public at large. Lt. Gen. Brehon Somervell, Chief of the Army Special Services, said in July that 1943 production schedules will not be met and the army will not be completely equipped until mid-1944. In fact, he said, total army goals for 1943 had to be cut 25 percent; airplane output alone will be 20 percent less than asked for.

In his speech of Sept. 21, 1943, Prime Minister Churchill revealed

that the invasion of Italy was *delayed 40 days* because of the difficulty of assembling enough ships and landing craft.

So far we have been extraordinarily fortunate, but even so the losses represent a serious problem. The weapons and equipment in battle must be replaced immediately without delay if the advance is to continue and if we are to give the soldiers who depend on these weapons a fair break on the battlefield. There will be no end to these requirements for weapons until the last battle is victoriously completed. — Gen. George C. Marshall, 9/23/43.

Reserved Seats On the National 'Gravy Train'

What is 'free enterprise' getting out of this war? That is, out of the \$124 billions spent by the U.S. Government for military purposes since July 1940? In the three World War I years, 1916-17-18, American corporations made a clear profit of \$17¼ billions (National Bureau of Economic Research figures). The peak was in 1917 with \$6.7 billions profits after taxes.

Based on present trends of profits, after taxes (The Dept. of Commerce estimates that) American corporate profits for 1943 will reach the all-time peak of 8.4 billions. This is higher than the bonanza year of 1942 and 1941, despite increasingly high taxes. What is more remarkable, it indicates that cor-

poration profits, after taxes, will be higher in the middle of a world war in which casualties are accelerating, than they were in the all-time boom year of peace, 1929 . . . 7.9 billion dollars after taxes. Corporation profits made in the piping days of peace are going to be overtopped by corporation profits made in the dark days of war. *Christian Science Monitor*, 9/27/43.

Some business men have claimed that 'in general' business is not making unfair profits out of *this* war. 'Net (after taxes) profits of all corporations last year was 83.2 percent higher than in the last peacetime year 1939.' James F. Byrnes, WMD, 8/16/43.

'*I don't want much profits,*' said Edward G. Budd, President of the Budd Mfg. Corp. on Sept. 24, 1943, at a House Ways & Means Committee hearing. Admitting his total salary and bonus, which had been \$85,000 in 1939, was \$205,000 in 1942, Mr. Budd asserted that 'manufacturers would be ashamed to take excessive profits.'

The American Car & Foundry Co., averaged \$72,000 profit a year between 1936 and 1939, but from its war contracts and other business in 1942, its profits after taxes were \$7,000,000 an increase of 9,700 percent. The American Locomotive Company had profits the first 6 months of 1943 nearly as large as all of 1942's, and the latter was five times its 1936-39 average.

Even the National Association of Manufacturers recognizes that Americans might recall that 21,000 new millionaires were made in the last war. Its surveys have found that 70 percent of the public has the strange idea that 'extravagant profits are being made out of the national emergency.' The Association is rectifying this situation by way of a booklet, 'How to Prevent Misinterpretation of Your Profits,' provided for its members.

We find salaries going up from \$5,000 and \$10,000 to \$100,000, and the men who get them think they are worth it, said Undersecretary Patterson, at a House Hearing Sept. 21st. But I say the soldiers are serving for \$50 a month. If that be demagoguery, make the most of it.

The following frank editorial quotations were found in the Sept. 15, 1943 issue of *Modern Industry*, a monthly business publication:

... Recognition begins to appear in Washington of the importance of the profit motive in obtaining maximum war production . . . *a greater incentive than patriotism is needed*, and the best incentive in prospect is the old American-proved hope of profit and freedom of initiative.

Well-meaning attempts to 'curb' profits in wartime, such as the 170 bills up before Congress in the past 25 years, are futile. As long as business operates, it will continue to make profits, otherwise it will not operate

as business. The record shows that private enterprise has done very well out of the war. It has proven its fiscal efficiency, to its stockholders. The mere fact of profits, however, is immaterial, except inasmuch as the citizens of America and their children's children will be billed to pay for these profits. The important thing is the resulting productive record, the technological efficiency, the conservation, and restriction of waste. *Profits or no profits, can America continue to operate its economy this way under the increasing strain of the war and the coming crisis of the peace? Interference with Flow Lines is Treason*

Outright frauds by some of the largest war contractors have been minimized as 'merely isolated examples,' but the fact that even one of these corporations pleads guilty is an indictment of the system which makes such things possible. *More than 1000 cases* are being investigated by the Department of Justice (*Christian Science Monitor*, 10/20/43).

A 'bill of particulars' filed Sept. 7, 1943, in a Kansas City court, according to an exclusive story in the *Chicago Herald-American*, contains, among others, the following charges concerning the Sunflower Ordnance plant at Eudora, Kansas, charges made by a former chief construction inspector and by FBI agents: 150 truckloads of lumber were burned *daily* in a pit, over a seven-month period, although the wood was pur-

chased for construction purposes. A thousand tons of iron pipe, costing \$100,000 was buried '*for the sole purpose of destroying it.*' Upward of 1000 employes a day were permitted to work on the project while drunk. Barricades 30 feet high and 8 feet deep were to be built of screened earth to take up shocks in case of explosions in powder houses. They were instead built of cornstalks, weeds, scrap wood and other waste materiel, 'thereby defrauding the government of \$810,000 and menacing the lives of plant employes.'

The 10 contractors were paid \$30,000,000 over the original cost estimate of \$81 millions. (For this every man, woman and child in the U.S. contributed 23 cents out of their war bonds and taxes.) These men could not be said to be in the pay of Hitler or Tojo; they were merely exercising their initiative to chisel, an initiative denied men conscripted to serve their country in the army and navy.

Cleveland, Oct. 11 (UP)—Federal Judge Emerich B. Freed . . . imposed 10-year prison sentence and fines of \$10,000 each today on three former officials, the Schmeller Brothers, John L., Frank and Edward, of the National Bronze & Aluminum Company, one of the world's largest producers of aluminum castings. The men were found guilty last week of war plant sabotage and by the court's action became the first war plant manufacturers to be sentenced for violating the

Federal Anti-Sabotage Act during the present war.

More than 100 witnesses testified for the Government against the officials, according to *Time*, Oct. 18.

When suspicious Packard officials rejected \$130,000 worth of castings and ordered them scrapped—after repeated warnings to National Bronze that defective parts would kill U.S. flyers, the *Time* article states, the company patched up the parts, charged the serial numbers, and shipped them back to Packard as new parts . . . the reason for the plot: National Bronze got \$2.70 a pound for accepted castings but only 15c for those scrapped.

Actually, the biggest case of fraud against our soldiers and sailors and fliers is the fact that *only 16 percent of the biggest war production plants are working at their admitted capacity*, in this, the world's greatest technological nation, engaged in total, technological war.

The Civilian Gets It In The Neck Too

Since Pearl Harbor, destruction by fire in the U.S. has been comparable to destruction by Nazi bombs over England in two years, according to Chief Fire Marshall Anthony J. Mullaney of Chicago (10/4/43). In 1942 there were more than 200,000 separate forest fires in the U.S., burning up more than 31,000,000 acres of forests—equal in area to the entire state of Louisiana!

In this kind, Christian nation that has more saloons than public schools

and spends a billion dollars more every year for liquor than it does for education, more citizens have been killed on our public highways and in factories and homes *since September 1939*, than in all our wars put together.

The largest number of 'absentees' in the country are those *not* in war plants, but those still working in banks and stock markets (925,000 in finance and similar occupations, of which 215,000 are in the insurance game), 10,500 in perfume and cosmetic factories, 16,500 manufacturing *curtains*, 17,000 making jewelry, as well as those 'absent' from war production in theatre ticket agencies, gambling houses, racetracks, night clubs, parking lots, saloons, and the organized 'dives' of the underworld. Most of them are not even essential to the civilian population.

Other causes for lessened effectiveness of the manpower we have are accidents and sickness, not strikes, which have caused only 2/100ths of one percent of man days lost on army contracts, according to James P. Mitchell, Labor Relations Director of the War Dept. These are some examples of the crying need for co-ordination of *all our resources* under the direct control and planning of the United States Government. Since its first public statement to that effect back in July, 1940, Technocracy has noted many prominent Americans making similar proposals.

If You Build a House On Sand

It is going to take the combined brains of all the scientists,

the engineers, and the business men in the United States and the united nations, just to survive. Never mind business as usual. Never mind the good old days. The fate of civilization is going to be determined for literally thousands of years by what you and I do—*not what the army and navy does*—in our homes, our factories, and in our offices, because the fighting line today starts at the production line. Col. James L. Walsh, chairman of War Production Committee, Society of Mechanical Engineers (1/28/43).

Contrary to general belief there is more good organizational talent to be found in government than in business. Washington is frequently referred to as a "mad-house." It would be madder yet if there were more business men there. Henry S. Dennison, nationally known Boston business man, *Aircraft Bulletin*, 9/27/43.

Total war demands that our vast economic system be operated along the organizational lines of a single industrial plant. Sen. Harley M. Kilgore, 2/22/43.

Contrary to this are the undercover maneuverings to conscript only labor as another scheme to cover up the mistakes of business. The smoke screen is laid down by magnifying the so-called manpower 'shortage' and ignoring manpower *wastage*, as well as materiel and money and time wastage in profits, fraud and low output. Current proposals to conscript labor

alone are the first steps of institutional fascism in America.

It is not only a matter of morale and unity, not only the slavery of fascism. It comes down to a problem of war operations and the perilous postwar period. Since industry is the source of all supply for the armed forces and the civilian population, its control cannot much longer continue to be left uncoordinated and unplanned. All industry must be conscripted simultaneously, as thousands of Americans are demanding.

Let's See What The Score Is

What is the cause behind all these shortages, idle equipment, blood money profits and industrial sabotage?

The answer lies in the system itself, the Price System, with its mechanism of business enterprise; producing less than is needed; holding back new productive capacity; producing inferior equipment; delivering commercial-type equipment to our forces fighting a 400 mile-per-hour war; and hoarding materiel and manpower. Technocracy does not maintain that this situation is caused by deliberate intent on the part of the owners and management of business. If it were by deliberate intent, it would be less dangerous than it is. This condition is produced by habituated action patterns. They have become so used to making motions with their left hand that they cannot use both hands when it becomes necessary to do so.

Production for the needs of the armed forces has been consistently

underestimated since as far back as January 1941 to say nothing of the point-blank refusal to accept defense contracts before that time because of the 8 percent profit limitation of the Vinson-Trammell Act, now scrapped.

The United Nations, chiefly on the gigantic battlefields of Russia, are winning the military conflict. America, as one of the United Nations, will be on the winning side. But let us not forget that this was accomplished so far *without* the complete mobilization of America, *without* planned direction of the national totality as an operating unit. America's contribution to victory comes from its array of technological equipment and its technological skill. The haphazard anarchy of the unplanned methods of free enterprise have been a constant drag upon the efficiency of the national effort, have hindered Americas' contribution to victory, have prolonged the war, and are a red signal of danger to the stability of the peace.

America, as a technological mechanism, cannot be operated in either war or peace at the peak of efficiency by individualized, voluntary, hit-and-miss effort. When military victory is finally achieved, it will be in spite of corporate business, free enterprise, and price-and-profit operations, not because of them. It is evident that we cannot win the peace either with such controls. The peace, with 18 to 30 million unemployed in America will be a greater crisis than the war.

Business is in charge of America's war effort. Business was in charge of America's war against the depres-

sion, and it lost that war. Now it hopes to attain a victory over the social changes of the future by maintaining business-as-usual after the war to distribute the abundance of America's new technology.

But the pitcher has gone to the well too often. The American Price System of commerce and industry has outlived its natural growth curve. For the last 20 odd years, it has been held up only by the strong arm of Government. The advance of science and technology now makes imperative the scrapping of anarchic privileged individualism in the fields of production and distribution of physical goods and services.

Technocracy's survey of the North American Continent indicated these facts years ago. While industrial and social chaos was deepening over this great land. Technocracy was quietly preparing a scientific blueprint of national operations for defense, security and abundance. The American people

have been sedulously protected from this information by a reversal of the self-proclaimed historic function of the Press. But there comes a day. 'Mightier than an army is an idea whose time has arrived.'

The technological structure of America demands that we Americans abandon the haphazard conflict of private and group interest in order that we may win this war and thereby defeat the enemies of America (without and within) and win the peace for America.

Americans it's up to you whether you want profits or patriotism. Do you still think we can solve America's problems with money and machinations alone?

Technocracy proposes Total Conscription of Men, Machines, Materiel and Money, with National Service from All and Profits to None!

Climate of Opinion

Stating that America is entering a 'peaceful revolution' which will change the motive of our system from private profit and scarcity to one of abundance based on human needs, Murray D. Lincoln, secretary of the Ohio Farm Bureau Federation, asserted that:

'If this war has done nothing else it has thrown into bold relief the direction we are going. It has crystallized the hunger and determina-

tion of the great mass of American people for abundance and security.' *Chicago Sun* (UP), 11/18/43.

'It is nothing short of treason to waste time now on post-war production plans, when American boys are dying on battle fronts all over the world.' John B. Hawley, head of Northern Pump Co., Minneapolis, (*Chicago Herald - American*, 9/15/43).

After Me You're First

by Alice Anderson

Maj. Alexander de Seversky (in December 1943 *American Mercury*)

'Aeronautical science today makes it possible for us to strike directly from American soil at the enemy's industrial war-making heart with long range aviation' . . . 'from bases on the North American Continent.

'With range and aiming controlled by new scientific devices, these great bombers will be able to destroy attacking planes before these come within the effective range of guns and rocket torpedoes, and thus will be well nigh impervious to fighter plane attacks.

'Long range power . . . is in character with our National genius which is technological. Our long suit after all, is not manpower and bayonets—China, Russia, and India for instance, have a great preponderance over us in this respect; our strength resides in industry, science, technological prowess.'

General Oliver P. Echols, U.S.A. quoted in *New York Times* December 31, 1942.

'If the war requires' we can construct planes which 'could carry bomb loads of more than 25 tons and have a range of more than 15,000 miles.'

Probably the most startling and realistic book on aviation in this war since DeSeversky's 'Victory Through

Air Power' is a new volume called 'Vertical Warfare' by Francis Vivian Drake. From the title it can be seen that the author, a flier with the RAF in the last war, has a functional purpose in mind for airpower, not a fanciful one.

Drake's thesis is that the Allies could destroy 40 percent of Germany's industrial power if they can drop 240,000 *tons of bombs* in that area over a 4 to 6 month period.

Howard Scott, Director-in-Chief, Technocracy Inc. in November 1941 *Technocracy*.

' . . . from these bases (surrounding this Continent) the attack could be carried by the Flying Wings to almost all parts of the world—right to the home front of any potential enemy of this Continent.

'It (the Flying Wing bomber of Technocracy's design) will have a unique and deadly armament, so deadly that it will blow any existing fighters out of the sky before they get within their own range.

'America has the technological skill and the facilities to make the great aeronautical advance required in producing these planes. No other country has the technological capacity to produce a plane of such size in quantity.

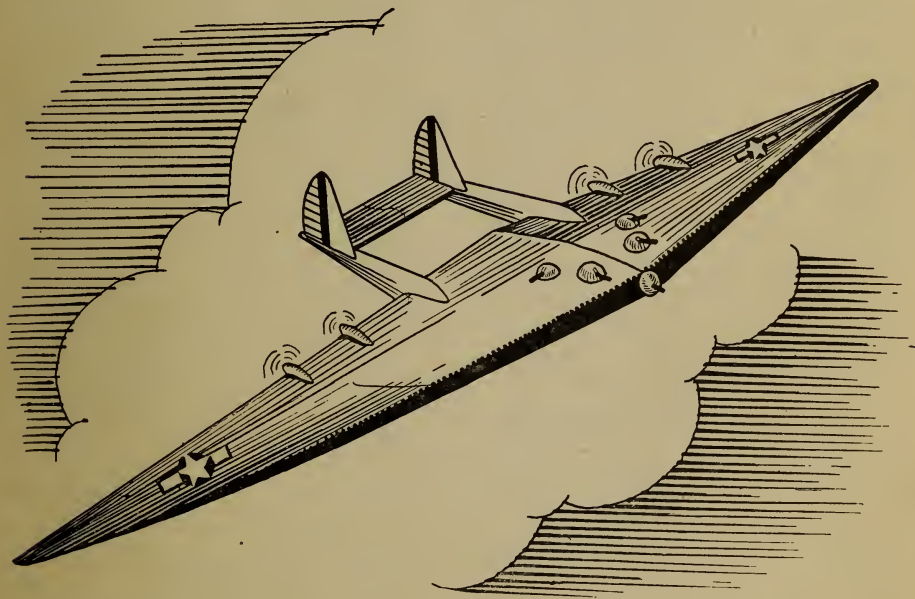
'The final downfall of naval power only awaits that day when some coun-

try does produce fleets of bombers having 6000 miles or more range and carrying 25 to 50 tons of bombs each.'

275,000 tons of bombs and other explosives over *any* fascist target, obliterating it completely in a single trip. (See 'Technocracy' magazine, A-21, November 1941.)

Three weeks before Pearl Harbor Technocracy first publicly described its design for a Flying Wing type bomber which, in stated quantities, could deliver from the air a total of

The aim being to win the war in a minimum of time, with a minimum of losses to our forces, we are learning that *it cannot be done without the maximum of equipment.*



WINGS OF THE CONTINENT SYMBOLIZE

Victory through air, land and sea power.
Victory in the shortest time at the lowest cost.
Victory without debt, price or profit.
Victory over post-war problems to come.
Victory over fascism at home as well as abroad.
Victory through science, technology and design.
Victory for America by American methods.

'Sharps and Flats'

by Robert M. Yoder

Reprinted by Permission of *The Chicago Daily News*
November 15, 1943

Unless the generals have hearts as hard as stone they will not end the war without giving at least a week's notice to the warriors of the New York Stock Exchange for life on that front has been rugged in the extreme and one more shock might do for them.

It is true that the market 'rallied moderately,' as the *United Press* reported, on Prime Minister Churchill's solemn warning on Nov. 9 that the bloodiest fighting of the war lies ahead, with the greatest sacrifices of American and English lives, but for a solid week before that the district around Broad and Wall sts., had been knee deep in gloom.

There was a \$2,000,000,000 slump on Monday, Nov. 8, on the gloomy news that London was betting on an armistice by Christmas, and the slump followed what was called the worst week since the news came that Mussolini had lammed. 'Peace Psychology' said the stories on Saturday, Nov. 6, 'received the principal blame for the relapse. The successful Moscow conference, the persistent Russian victories over the Nazis in the Ukraine, the Allied advance in Italy and the unceasing bombing of the Reich brought the thought that Germany could blow up overnight.'

There wasn't a piece of bad news anywhere, you see, just unrelieved

success for our side, which is very, very bad for the market. It had been worry, worry, worry, all week long.

Douglas Aircraft touched the low point of the whole year, so did Dow Chemical. United Aircraft was at least soft and so was U.S. Rubber. About the only real bright spot in this whole disturbing week was American Distilling. Even with pessimism a foot deep, and the clouds of peace growing blacker every minute, whisky held its ground. Held, nothing, it climbed six and a quarter points. The boys may have been badly discouraged about prospects that the war would last, they may have been depressed about the future of aircraft and chemicals, but they had confidence that the nation is not going on the wagon.

It would be nice to think they made up their losses on munitions by a profit in booze, but that is too much to hope, and undoubtedly a good many investors took a bad loss that dark week, and perhaps some of the traders, too.

Is that what we are fighting for, or if not fighting, paying taxes for? Are we going to defeat Fascism only to produce a nasty break in the New York stock market? What a hollow victory that would be, what a mockery. What irony—to save free enterprise and lose money on Armistice Day.

There will be more good news, that has to be expected. We cannot count on the Russians to slow down; what do those Communists care how U. S. Rubber closes? This winter undoubtedly will bring further bombing of the Reich, too, in spite of its proven bad effect on some of our best known

securities. There may be further political successes, too, like the costly day when Mussolini toppled. And in time there may be another invasion of Europe. It is sickening to think what that might do to the stock market. After that, they should have a furlough.

Tokio Broadcasting

Michio Ito, a repatriated Japanese broadcasting for propaganda purposes to the Japanese people recently, had the following to say about the United States, according to a report by Harold Ettlinger in the *Chicago Sun*, November 26, 1943:

It is true that our enemy, the United States, . . . is desperately carrying out her counter-attacks by depending upon her rich material resources. . . . However, the United States also has many weak points. If I should speak of the American people based upon my observation of them . . . the first weak point I say is the democratic system. . . . Public opinion lacks unity.

There is 'lack of unified relationships' among governmental departments. There is a 'festive mood of

the people who do not know what war is.' There is 'no plan for certain victory—but instead the desire for luxury is more dominant in their minds.'

But nevertheless, we're going to lick the hell out of Oriental fascism. Technocracy is well aware of America's weaknesses, but they're not what you imagine they are, Ito. The technology of America will prevail over the human toil and hand tools of fascism. The great technology of America needs unification and positive direction. This can and will only be accomplished by Technocracy's design of Total Conscription of Men, Machines, Materiel and Money, with National Service from All and Profits to None. Perhaps you hadn't heard about this, Ito. So sorry! Excuse it please.

One frequently sees references in print about business men in which they are referred to as hardheaded executives, etc. This description is supposed to be a compliment, for the 'free press' of America seldom makes derogatory remarks about business. We wonder if the press knows the commonly accepted definition of a

hardhead? It is given in Webster's dictionary as 'a shrewd unfeeling person, a blockhead.'

We know of another definition that seems to fit well. 'A hard-head is a person into whose head it is hard to get a new idea, especially if it interferes with his private privilege to chisel at public expense.'

High: Low: Close

by W. T. House

Most American industrial establishments of consequence began in a small way under individual or partnership ownership; or else as joint stock companies. Shares were sold directly to the public without having been listed on the Stock Exchange. The money obtained was mostly used to expand the plant and securities speculation was rare.

The greater part of all investment in this country since 1900 has gone into pure paper. Stocks and bonds are fed into the Stock Exchange and sold to the public, the proceeds usually going to insiders and not into new plants. Whatever social function the Stock Exchange may have performed in the past—well that's in the past now.

Did you lose your overcoat in the Stock Market bump and are you now shivering at the thought you may lose your shirt as well? The devotees wail that the better the war news gets, the lower drop the prices. 'How can that be?' they cry, 'London went up on good news; why don't our markets do the same?'

Unbeknown to the thousands who read the ticker tape and read little else, there is a fundamental difference. Those small bits of land called the British Isles have few natural resources but a huge population. Its people must, therefore, live in a scarcity economy, with little probability of achieving the more abundant life. For them, then, the end of the war means that profit restrictions will be lifted from good old private enterprise, shares in companies will therefore sell at higher prices on their Stock Market.

On this North American Continent,

however, even before the war, we had installed so many power machines that we could produce goods much faster than we could find Price System markets for them. During the war, we have installed enough newer and more efficient power machines so that we can produce about twice as much goods. The reaction in the business world is equivalent to offering another ice cream cone to the four-year old who has already had one too many cones. Unless business can find a way to destroy that potential abundance, it sees thousands of bankruptcies coming, even before the end of the war. Business is thus uncertain of its future and this is reflected in the Stock Market; and in judging the strength of that uncertainty one must bear in mind that the growing inflation is a strong force trying to push prices up. The indications are that it is time to sell business 'short.'

Impatient, you ask a question: 'How does the Stock Market help to win the war?' Frankly, I don't know a single argument in its favor from that point of view; yet in Canada at least it is classed as essential and we are now only talking about making the employees of brokerage houses subject to compulsory transfer to war jobs—and this in the fifth year of war. The attention and activity of thousands of people are centered in this branch of business, the only part useful even to a Price System war effort being that some of the salesmen sell

bonds in the Victory Loan drives—for a commission, dollar patriotism.

Whether the government will divert this activity for profits into productive war work through Total Conscription of Men, Machines, Materiel and Money, remains to be seen. If the government does not act, and if the trend to business uncertainty continues, the financial pages of our newspapers may have written in brief already, the story of all business as well as the Stock Market:—HIGH: LOW: CLOSE.

High Cost of High Finance

John D. Rockefeller recently called off his proposed sale of \$25,000,000 in stocks in commercial enterprises; he had planned to use the proceeds to buy war bonds. One explanation, offered on the *Chicago Daily News* financial page, was the expense 'involved just getting rid of the 25 million dollars worth of pieces of paper.

'It is probable that a matter of some \$250,000 or more in printing and other expenses caused Rockefeller to change his mind. This estimate is based on the experience of one corporation engaged in a financing operation. The printing bill came to \$50,000 for the prospectus, while the preparation of the material therein took the time of a staff of 12 highly trained men for six weeks.' (Italics ours.)

And certain interests still claim there's a manpower 'shortage.' Here is just a sample of the manpower wastage of thousands of men and

women now at work in stock exchanges and in stock brokers' offices throughout the nation. Only Total Conscription can solve the manpower as well as industrial-power wastage existing in the face of total war.

Total Conscription would mean that no corporate monopoly could assume the attitude that it is making sacrifices in allowing expansion which might lead to overproduction after the war.

Total Conscription would enlist all business and all corporate wealth in the service of the nation for the duration of the war and six months thereafter.

Total Conscription would mean that we would not pile up any more new war debt, for on the very day such a program was installed, it would be impossible to increase the debt by one single dollar.

Bureaucrats and Politicians

By Publications Division 8741-1

Item 1.

12,000,000 persons may be put out of their jobs within 6 months after the war ends, according to the Bureau of Labor Statistics. The Bureau also pointed out that 'failure to set our economic house in order would make a sound foreign policy impossible,' and our continued refusal to deal with basic problems at home 'will eventually force us to the brink of another and more terrible war.'

Item 2.

The Congress which is now flirting around with beautiful resolutions and post-war plans for the whole world is the same Congress which voted the extinction of the National Resources Planning Board which was engaged in formulating a program for post-war America.

Item 3.

No less than 80 large mineral workings and 700 smaller mines in the rich Leadville mining district of Colorado are in process of being recovered from the grip of 10,000,000,000 gallons of impounded water, and restored to production because of action taken by the 'bureaucrats' of the Department of the Interior.

Some months ago engineers of the Bureau of Mines, following preliminary study and recommendations by the Geological Survey, made an analysis of possible drainage methods. A main tunnel 11,326 feet long and

two lateral tunnels totalling 5,856 feet in length will be bored to drain off water which has kept the district closed down since 1933.

The Leadville district comprises four principal mining areas with a potential output of 3,000,000 tons of zinc-lead ores and 1,000,000 tons of manganese ores for war use. The district has been periodically flooded and partially unwatered by expensive and inefficient pumping methods ever since 1899. Eventually, the problem became too big for 'free enterprise.' Due to conflicting property rights and general technical myopia, no overall plan was ever adopted. Now that America needs the fullest possible production of minerals, the Government is forced to act to supersede the property rights and picayune interests of 'free enterprise.' It will be noted that the action was initiated and will be carried out by the technical personnel and departments of the Government.

Oh, Yes! Congress did appropriate \$1,400,000 for the project after it had been urged and okayed by the Interior Department, the Geological Survey, the Bureau of Mines, the Zinc Division and the Mineral Resources Committee of the W.P.B., the Metals Reserve Company, the Board of Economic Warfare, the Office of Production Research and, almost unnecessary to add but enlightening to note, the Colorado Congressional delega-

tion and property owners and public officials of Colorado.

Item 4.

The political method of operations succeeded in reaching a new low point in Congress recently. A bill had been proposed to extend \$300,000,000 in Federal aid to schools throughout the nation. Numerous Southern Senators were supporting the measure and the outlook for its adoption was favorable.

However, Senator William Langer, Republican of North Dakota, threw in a nifty amendment to the bill which would have prohibited any racial discrimination in schools qualifying for Federal grants. The amendment was adopted by that august body, the United States Senate, 40 to 37, which ordered the bill back to a committee pigeonhole. There it will repose in innocuous desuetude, a dusty memento to racial animosity and political finagling.

Senator John H. Overton, Democrat of Louisiana, stated that the Langer amendment was 'an attempt to foist upon the states the concept of mixed schools for negroes and whites.' Other Southern Senators, who had supported the measure, declared that the anti-discrimination amendment had been sponsored by Langer because he knew that its adoption would compel them to turn against their own measure.

There's no doubt about it, that's

what is called political sagacity. Apparently the Southern Senators would rather continue to cherish their racial hates than promote the interests of their own white children.

Note

We hold no brief for that oftentimes conscientious and efficient type of public servant called a 'bureaucrat.' Neither have we got the axe out for the average politician. Nothing so homely and inefficient as that. We favor the tommygun of publicity for his breed.

The examples quoted above are fairly representative of the difference between the political approach to social problems and the sort of semi-scientific approach permitted, or possible, under the constant restrictions and interferences of political bodies.

Nothing better can be expected under the Price System. These examples illustrate a trend which is present, and growing, even within the restrictive confines of political government. It points up one thing. If you want to get things done right in a technical civilization, you must call in the technical men. The extent to which this is done and the degree of freedom from interference permitted them determines results, all other things being equal.

Politics, political sagacity and politicians belong in limbo along with the philosopher's stone of alchemy, the dunce cap of astrology and the dead departed glories of 'free enterprise.'

Brotherly Love

Nowhere on earth can you find a friend so bubbling with brotherly

love as a politician who is a candidate for re-election.

An American Soldier Looks At 'Shortages'

by Pvt. Arland R. Meade

Woodman Spare That Tree

ON the last day of October 1943 the *Cincinnati Enquirer* used 157,500 square feet of newspaper to announce, in a paid advertisement, that there is a 'critical shortage' of paper.

The advertisement, 18 x 6 inches in a paper with a circulation of 210,000, carried in large print the words, 'There's a critical shortage of waste paper right now, and there's a critical shortage of manpower, too, in the vital paper industry!'

'Shortage' and 'waste' are words which signify a condition and a practice undesirable in war time, to say the least.

So, how does business, including the just-mentioned newspaper, cooperate to cut down waste to prevent shortage? On October 31, in a Sunday edition business used 13,807,500 square feet of newspaper, in the 'Enquirer' alone, for advertising goods available for sale—note: *goods available for sale*.

In a city and nation where stores are closing on every business street due to insufficient goods to sell and during a period when the remaining goods need, for the public interest, to be conserved during the war and six months thereafter, businessmen try to maintain profits and 'business as usual' to the last safety pin.

Then one of these same enterprises prints a plea to the public to save paper because 'paper is needed to make containers to keep supplies flowing to our armed forces.' Then business, presumably with its 'conscience' clean, writes advertisements, many of full-page size, to describe the breathtaking 'smartness' of some new dress creation—for only \$9.98.

Ladies, gentlemen and others: I wear an olive drab uniform which may or may not look 'smart,' but it is comfortable and it is serviceable. Furthermore, I may die in it and, if so, I prefer to die to preserve the best of America for Americans who are left and are to be, not for profits nor business as usual.

Only half the story of advertising waste in the newspaper selected as a typical example has been mentioned. In addition to the space used for display ads for goods to sell, nearly as much space was used for classified advertisements, political and military soliciting (as for WAC enlistments) and for jobs wanted or help needed. The latter has become a major user of our newsprint. While these types of advertising have some war effort function, these, too, can be abolished by an overall plan of mobilizing all American resources, men, machines, materiel and money.

It often seems that a man in the

armed forces feels his stake in the war effort more keenly than men who are not in. But no American can afford to let misuses of our resources, newsprint or other, continue, and advertising today is misuse of resources, both manpower and material.

One Gigantic Service of Supply

The solution to this problem of waste is basic and simple. I get issued to me sufficient clothing for working or fighting and for all the dress-up necessary in wartime. No newsprint is used to 'sell me' on these items; I do not need to read advertisements nor look for 'bargains.'

Issued to me is sufficient food to maintain strength and health. I get prompt and good medical attention. I am transported to places I need to go when I must be there; I am sheltered wherever necessary.

Does the American civilian need or deserve less than that? Or more? And does he need to take time to peruse pages of paper-wasting advertisement? He does not!

Scientifically designed Total Conscription—it will not be total unless scientifically designed—will eliminate this useless expenditure of men and materiel and produce at the same time more efficient operation.

That part of our armed forces known as Services of Supply has set a precedent and a partial method for mass distribution of the supplies for

living and fighting a global war with material-consuming, mechanized armies.

There are also living and fighting to do on the home front. Total Conscription will install a vaster services of supplies to integrate the supplying of all Americans into one overall plan.

Newsboys will not be required to tote bundles of papers with 60 percent of their weight devoted to advertising; printing presses will be relieved of more than half their load; the pinch for manpower all along the paper and publishing front will disappear; men and women now devoting their time to advertising and other forms of salesmanship will be freed to produce and deliver materials serving to shorten the war.

This recital is an indication of what can be done in just one field of industry by installing a scientific plan of operation. When the same overall pattern of operations is applied to all industries a vast, new reservoir of manpower opens up. Conscription of labor alone is unnecessary and inadvisable in America. With personnel, materiel, machines and money, all conscripted and synchronized into an all-American Service of Supply, we will have such a multiplication of our national strength that the task of winning the war will be made much easier and the threat of post-war problems will cease to exist.

The term 'free enterprise' really means laissez-faire enterprise, which

does not mean 'live and let live' as people suppose but 'leave us alone.'

The Bear That Fights Like a Man

by Robert Bruce

America's Dark Hour

In September 1863, the Russian Atlantic Fleet sailed into New York Harbor, under the command of Rear Admiral Lisovski. It consisted of three frigates, three clippers and two corvettes.

At that time Czarist Russia was in trouble with Poland, Britain and France. War seemed imminent and Russia needed friends.

The United States too was in trouble in September 1863. The tide of the Civil War had turned in favor of the North, and victory over the Confederacy seemed assured. But France and England were scheming to aid the declining Confederate fortunes by active intervention. The United States, too, needed friends.

The idea of sending the Russian Fleet to America was proposed by Admiral Popov. There were two good reasons for Russia's action. First, the Russian Atlantic Fleet could easily have been bottled up by England's Navy in the event of war. Second, if the Russian Fleet could get to a friendly foreign port, its potential ability to dart out and harass enemy shipping would make England and France think twice before declaring war on Russia.

There were likewise two good reasons why the North welcomed the Russian proposal. First, the presence of the Russian fleet in American waters would deter England and

France from declaring war on the North to help the South. Second, it would be a powerful psychological blow against the Confederacy.

Here was the flowing together of diverse interests into common action. Then, as now, Americans and Russians liked each other as individuals and respected each other's countries as powers, but detested each other's form of Government.

You Help Me and I'll Help You

Russia sent the fleet primarily for its own strategic interests. The North also accepted the proposal primarily for strategic reasons. Out of these basic causes a friendly atmosphere arose. Czar Alexander 2nd, who had freed the serfs of Russia on the same day that Lincoln took the oath of office, was hailed throughout the North as 'emancipator of the serfs and friend of the Union.' On the other hand, Russia, too, acknowledged that the action of the North had been helpful to her.

Admiral Popov was in command of the Russian Pacific Fleet that sailed into San Francisco Bay in October 1863. Hearing a report that Southern cruisers were about to raid the Bay, he ordered his officers: 'If such a corsair puts into port, signal: "Put on steam and clear for action": We are bound to assist those who have offered us help.'

Russia and America had common interests in 1863. Today the common

interests of Russia and America are tenfold greater than they were 80 years ago. These entities are the two largest, contiguous Continental areas on earth. Regardless of their differences in political and economic ideologies, the physical problems and resources of the two areas are similar.

So far in World War number two, Russia has done the lion's share of the fighting against European fascism. In so doing she has been pulling America's chestnuts out of the fire. Lend-lease aid, in the words of Stalin —'considerably facilitated the successes of our Summer campaign.'

Russian industrial development and military victories were not achieved by its political ideology. Neither have America's been achieved by its political ideology. In both cases it was done by the application of technology. North America is the Number One technological potential of the World. Soviet Russia is the Number Two technological potential of the World. They have much in common. For these reasons Technocracy has advocated a complete economic and military alliance with the U. S. S. R. for a number of years.

Who's Who in Canada?

Finances

Figures supplied by the Royal Bank of Canada indicate the following purchases in the Fourth Victory Loan there:

All Canada.....	\$1,308,985,500
Ontario	641,638,950
Quebec	360,696,600

Enlistments

The British section of Canada has supplied 35 percent of all its eligible males, but Quebec has supplied only 12 percent of its.

Casualties

According to John Mason Adams, a contributor to Letters in Newsweek for November 8, 1943, the casualty ratio in the R.C.A.F. is about as follows. He broke down 63 official R.C.A.F. casualty lists taken at random, involving 770 names, Ontario

gave 465, U.S.A. 96, British from Quebec 86 and French from Quebec only 31. The item does not state but presumably the rest were English.

In the lists analyzed, the U.S.A. casualties in the R.C.A.F. were three times as large as those of the French from Quebec. The total population of Canada is 10,376,876—1931. The population of Ontario is 3,431,683. The population of Quebec is 3,000,000, of which 90 percent are French in race, language, culture and traditions, despite the fact that Quebec has been separated from France since 1759.

By order of the Quebec Act, passed by the English Parliament in 1774, the French civil law was recognized for the province and provision was made for withholding representative English institutions like those of other British provinces.

America Must Choose

Editorial

When I Was a Child

AMERICA has come a long way in six generations. We have grown from a thin strip of settlements on the Atlantic Coast to be the mightiest industrial nation on earth. Our expansion has been so rapid that we haven't had time to look around and see where we are going. The trail of our national history is marked by the monuments of many historic and spectacular achievements. But it is also littered with the tombstones of many unsolved social problems. The mistakes of one generation were invariably covered up by the expansion of the next. During our rapid development, we always followed one paramount negative rule as individuals and as a people.

That rule was the denial of any positive social direction. It was always every man for himself and the devil take the hindmost. If a man didn't want to work and save and succeed, that was his own lookout. If he couldn't succeed at home, he could always go out West and grow up with the country. If he didn't like our system, he was always welcome to go back to the 'old country.' After all was said and done the system had justified itself in its major premises by its major achievements, so we always said. Social direction might be all right for those nations who needed it, but not for us; we didn't need it.

America was on the go; we didn't know where; but that didn't matter. As long as our expansion continued, we could justify ourselves and get away with such a nihilistic social attitude. Now, however, American civilization has reached the limits of its expansion under the Price System. In obedience to the immutable laws of dynamic equilibrium, we stand now, as a nation, poised at the peak of our growth curve. 'America has come to the end of an epoch!'

The Finger Points

From here on out, there are only three ways we can go. We can move upward to a higher form of civilization, organized on a non-price basis. Or, we can jump off into the social and physical suicide of fascism; or chaos. We cannot stand still and we cannot go back to the good old roaring days of our national adolescence. We cannot turn back the clock of time and repeat our natural growth curve all over again. The growth process is unidirectional and irreversible. It only occurs once to each organism on this earth whether it be a dusty weed along the side of the road or an aggregation of human beings making up a nation.

For 150 years America went up like a rocket. Now the question is posed—must we come down like a stick? For 150 years, as a people, we resisted and refused all positive social direction. Now we find our-

selves in the greatest need for that which we never wanted before. Indeed it has suddenly become an indispensable necessity. The pressure of physical events dictates that we must now accept positive social direction or have its alternatives of negative social compulsion, or chaos, forced upon us.

If we move upward to a higher form of civilization organized on a non-price basis, it must be by designed social direction. If we backslide into fascism, we will find that it consists of a barbaric network of social compulsions in race, religion and economics, all equally repugnant to the best historic ideals of America.

If we indulge in civil disorder and strife, we will disrupt the flow lines of industry and break down the complex inter-related machine civilization upon which we are all dependent. In the resulting chaos, 75 percent of the population will perish by fires, starvation and disease. This was the picture of our national dilemma up to and including Dec. 6, 1941.

Rendezvous With Destiny

To this internal, social dilemma was added the greater national danger of Total War on December 7, 1941. No nation can solve its internal social problems unless it is free from outside aggression. This war was forced upon us and we must win it or cease to exist as a nation. That is the greatest job which faces America now. However, the categorical compulsions of the physical laws of nature continue to operate in time of war as well as peace. Indeed they

are intensified. The same physical factors which determined the past expansion and present decay of the American Price System, as a dynamic producing and distributing organism, are still in operation. In its essence America's war problem is the same as its peacetime dilemma. The active factors involved now are part and parcel of the same irreconcilable conflict between advancing science and a static social system. The same futile Price System methods which had long failed to solve our internal social problem are now in active control of our war operations.

We may now expect their effects to be translated and magnified into terms of acute national danger, in place of the comparatively less harmful muddling from one futility to another, characteristic of their past efforts. Our political leaders don't even know what all the pother is about, and our smart business men are chained to the grindstone of profit by six generations of conditioning and accumulated tradition. America must look to its people for vision.

Of the People By the People—

At the very best, if Price System methods do succeed in winning the war for America, it will be a long-drawn-out affair, at a staggering cost in lives of this generation and heavy burdens of debt to those who come after. And what of the peace which will follow? Can we expect Price System methods to win the peace? They won the first world war and lost the peace! If we win this war with Price System methods and lose the

peace, it will be a pyrrhic victory, and we will have to do the job all over again in a few years, with all the odds against us.

A scientific program of positive, designed social direction is the only solution for our internal social problems. The very same type of program related to the trend of world events today is the only dynamic with which America can wage this war successfully in the shortest possible time, at the lowest cost, and win the peace which follows, and, further, guarantee the future of America. Such a program has been all worked out. It is ready to be installed and America has the skilled personnel to administer it. Technocracy asks how

many futilities must we experiment with? How many disasters must we suffer before we install the program now called for by the trend of events?

Written across the map of North America by its natural geographical and geological constitution and the industrial characteristics of its civilization is the solution to our National problem. The key to that problem and the only possible social dynamic with which America can face the future is Technocracy's program of TOTAL CONSCRIPTION OF MEN, MACHINES, MONEY and MATERIAL, with NATIONAL SERVICE FROM ALL AND PROFIT TO NONE!

Who's That Knocking At Our Door?

'Barring some unforeseen change in the age ratios of our population, the United States right now has a greater percentage of military effectives in its population than it ever had before, or will ever have again. This is our hour of biological might and we would better not fritter it away in indecisive war, or patched-up peace.' Excerpt from *Chicago Daily News*, 11/27/43 editorial.

'During the next 10 years it may be decided whether civilization will continue to develop toward a greater utilization of science to free and dignify mankind, or will become petrified in a system of human exploitation greater than the world has ever seen.' Margaret Mead, Ph.D. quoted

in *Chicago Herald-American*, 10/28/43.

Applications of science to the field of human relations will bring about a new world in which wars will have no place, Dr. Franklyn Bliss Snyder, president of Northwestern University, declared last night here at Latin-American Dental Meeting.

'The great task before the world now is to turn to constructive purpose the energy, ingenuity, and patriotism of the scientists of the world. *We need to wed science to human relations*, both national and international. If we can combine these two, we can create a new world.' From *Chicago Sun* of November 9, 1943.



Photo—Courtesy Texas Gulf Sulphur Co.

Loading sulphur at Newgulf, Texas. In industrial civilization sulphur and its compounds play a big role. They're necessary in vulcanizing rubber for tank treads, tires, life rafts; in smokeless powder and high explosives; in plastics, rayon, matches, dyes, fungicides and insecticides; in metallurgy; and making super-phosphate fertilizer. U. S. produces 3,500,000 tons a year. First resources then energy.



Photo—Courtesy Province of Quebec Publicity Bureau

Energy in the making at Shipshaw, giant Canadian power and aluminum project. Digging a 1½ mile long canal, wide and deep enough to float ocean liners, to relocate the Saguenay River. This gives a greater drop and 50 percent more power is obtained from the same flow of water. See May-June Northwest Technocrat, June Technocrat or July-August Great Lakes Technocrat of 1943 for details of Shipshaw.



Photo—Courtesy Bethlehem Steel Co.

Here is another kind of energy, the gamma rays of radium. Concentrated in this 250 milligram pellet, weighing less than 1/100 of an ounce, is the power of penetration to make silhouette pictures of flaws in the interior of marine turbine casings. The defective part is then excavated, refilled by welding annealed to relieve stresses and rechecked by radium pictures. After energy comes technology.



Photo—Courtesy General Motors Corporation

Technology begins with measurement and planning and involves coordination. The draftsmen shown are working on some specific part of a coordinated design for production. Not so with our national effort as a whole. There are millions of conflicting plans for details but no master plan to orchestrate them. This is the greatest weakness of America. In resources, energy and technology we are tops.



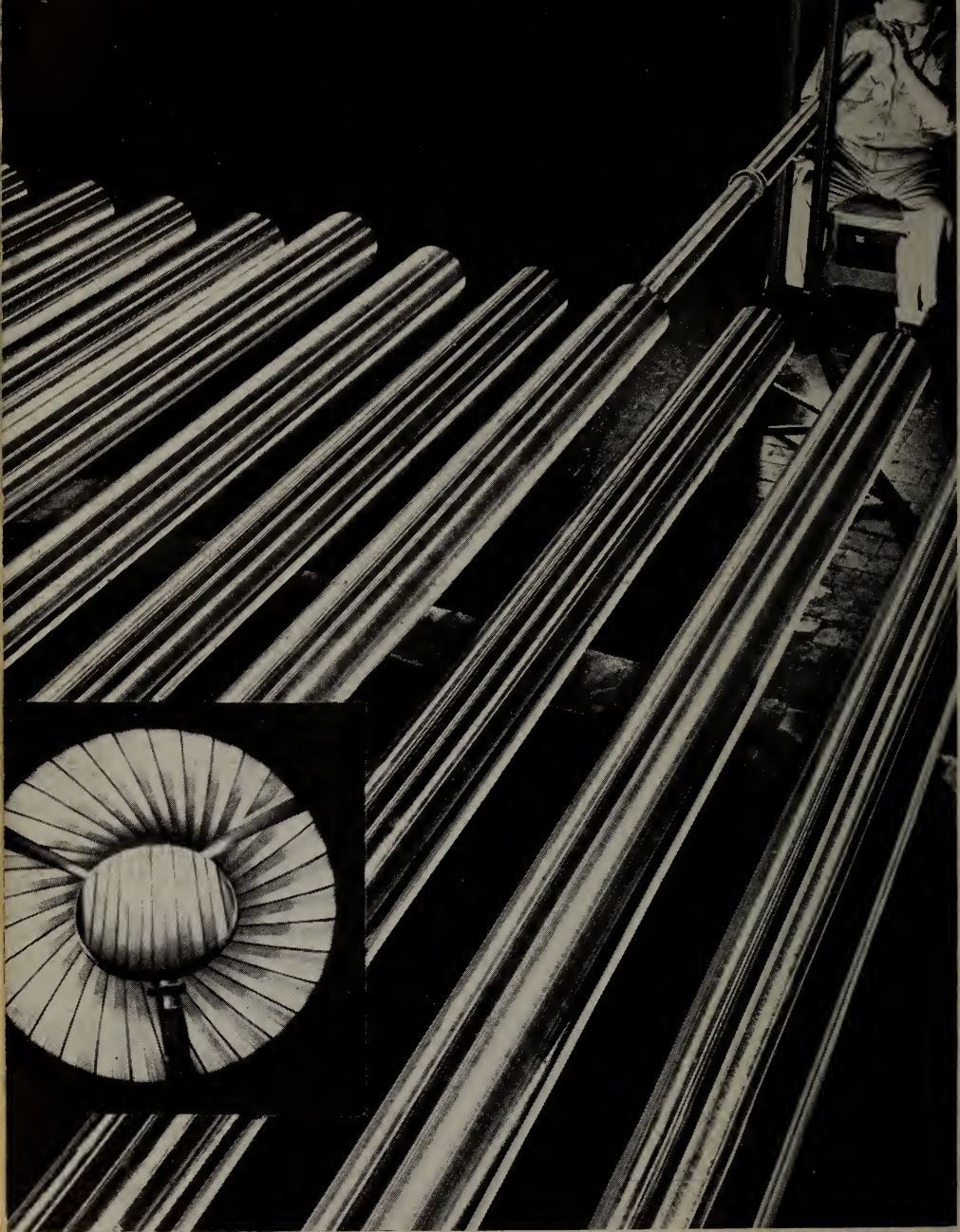
Official U. S. Navy Photo

The technological character of this war is illustrated by the special types of ships required to transport men, machines and materiel. The landing craft LST pull up to shore, two big doors open, a ramp is lowered and the half tracks, tanks and trucks roll out. LST are built at shipyards along inland rivers and Great Lakes ports. At Attu, Kiska, New Guinea, Rendova, Sicily their gaping jaws have opened wide.



U. S. Army Signal Corps Photo

Then we have the army's amphibious trucks called 'Ducks'. They haul 2½ tons of supplies, are propeller driven in the water and have six-wheel drives which carry them at high speed on land. They are designed for putting men and supplies at ordinarily inaccessible spots, supplementing LST. They hit the beach and keep right on going. America wages war with the tools of social change. The more the better. Catch on?



Photo—Courtesy Chevrolet Motor Co.

Inspecting the interior finish, bore and rifling of a 90-mm anti-aircraft barrel. Inset: closeup of the rifling as seen through the boroscope, a special optical instrument developed for this purpose. The diameter is also checked by a precision air gauge which measures the volume of air escaping from sealed in barrels. These guns have a range of 30,000 feet, can be fired by manual or remote control.



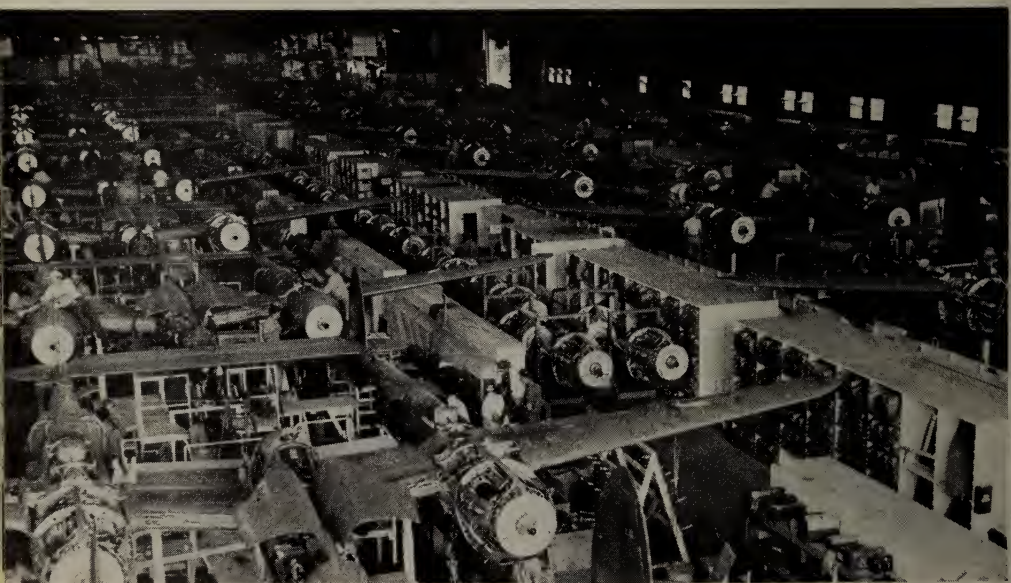
Photo—Courtesy General Motors Corporation

'Lay that carbine down babe, after you've inspected it.' This short, light, deadly weapon (we mean the gun) weighs less than $5\frac{1}{4}$ pounds and is replacing side arms and rifles in jungle and invasion fighting. It's the U. S. Army's new M-1 30 cal. all-purpose carbine. As weapons become more efficient they tend to become smaller and lighter with greater power. That's almost a rule for all mechanisms.



Photo—Courtesy Lockheed-Vega Corp.

Here is the Lightning P-38, a plane that 'goes upstairs' 50 percent faster than a Zero. Its speed and maneuverability enable it to be used as an interceptor, dog fighter, dive bomber, tank destroyer, camera plane or medium bomber. It flies at 'over 400 m.p.h.' yet lands at only 80 m.p.h. In its aerodynamic lines one sees a closer approach to the flying wing. The ultimate is all lift and no drag.



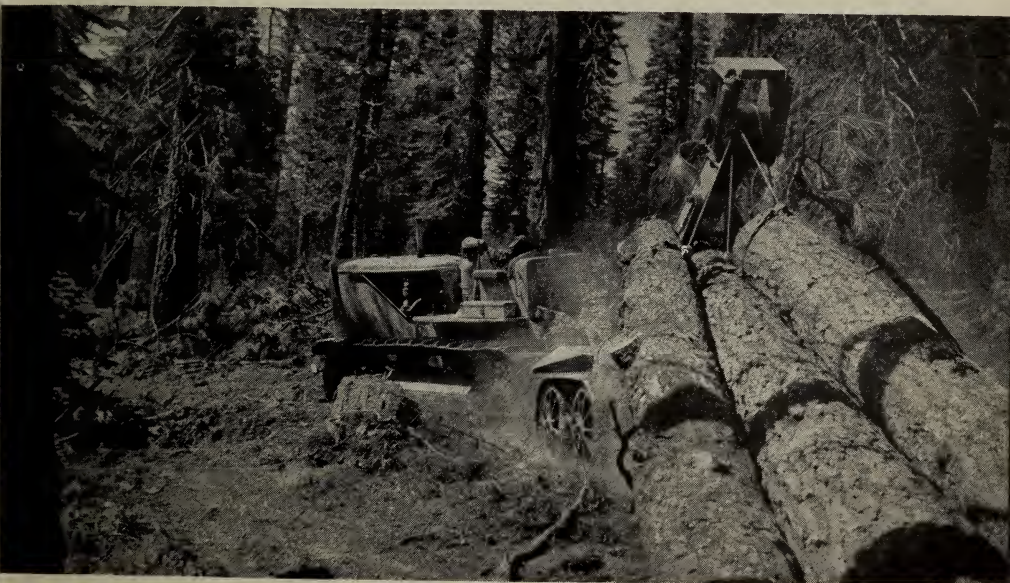
Photo—Courtesy Lockheed-Vega Corp.

The P-38 is produced on a continuously moving assembly line. The installation of this line required eight days but it doubled the plant's output and resulted in a 40 percent reduction in man-hours per plane. Sub-assembly lines carry engines and parts to the main line. Workers ride the ships as the line moves along. Maximum production involves maximum technology and minimum man-hours of labor.



Photo—Courtesy Province of Quebec Publicity Bureau

Here is a diffent kind of flying. Towed by a twin-motored Dakota these R.C.A.F. officers recently made the first glider flight across the Atlantic, from Montreal to England. Glider trains are being talked about for post-war use as freight trains of the sky. It's simpler to build giant Flying Wings. They'd require less man-hours per ton miles of freight hauled. Who wants to work anyhow?

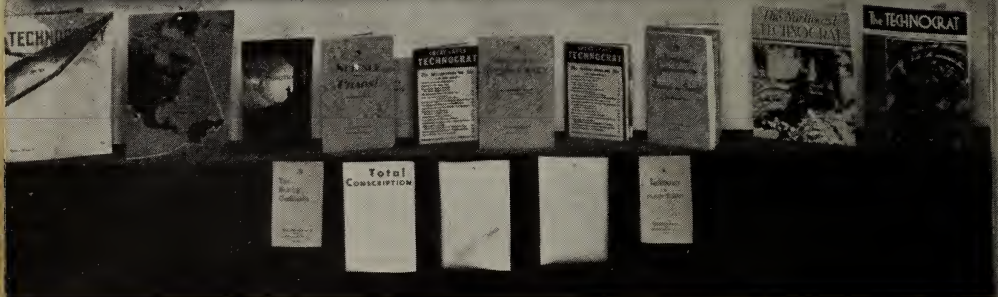
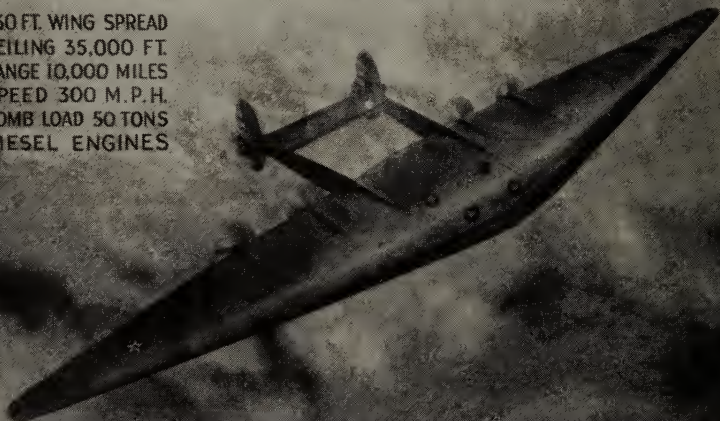


Photo—Courtesy Caterpillar Tractor Co.

Here's a Caterpillar Diesel D7 tractor with Hyster arch hauling logs at Montgomery Creek, Calif. Its average load is 3500 to 4000 feet; the cost of operation about 20 cents an hour for fuel. That's technology. The full application of technological methods will conserve natural resources. In 1942 we permitted an area of forest to burn down equal in size to the State of Louisiana. That's HELL.

TECHNOCRACY'S FLYING WING

330 FT. WING SPREAD
CEILING 35,000 FT.
RANGE 10,000 MILES
SPEED 300 M.P.H.
BOMB LOAD 50 TONS
DIESEL ENGINES



Techphoto by J. R. Rushing

IDEAS ARE COMMON PROPERTY, HELP YOURSELF

Technocracy has a large and growing volume of literature. This includes four continentally circulated magazines, numerous pamphlets and a Study Course Book. The body of thought expressed therein cannot be obtained at any school or college. It's scientific, new, factual and unanswerable. The above picture shows a window display installed in one of a chain of ten cent stores at East Orange, N. J. by Technocrat J. R. Rushing. A supply of literature is available inside the store.

Technocracy is an all-American organization. It salutes America's technology and her gallant citizens in the armed forces who are applying it against fascism abroad. Total Conscription of Men, Machines, Materiel and Money With National Service From All and Profits to None will make their job easier by intensifying the technology of war; and also insure all Americans against the perilous post-war period ahead.

Unconditional Surrender Begins At Home

by M. M. Fertig

Headline, in an American newspaper (date and name of place withheld purposely):

'THOUSANDS OF MEN, WOMEN NEEDED AT ARMY DEPOT'

The text of the news item stated that men and women would be schooled in the depot's modern training shops, where the most up-to-date machinery had been installed. These workers were going to be taught machine technology.

Technology at the Cross Roads

TODAY'S machine technology—doing things with machines—and that primitive way of doing things with hand tools, which has consolidated our spiritual, political and economic rackets into a major oligarchy, these are the two physical forces engaged in Total War. Before long we will have not thousands, but millions, of Americans who will know the fundamental principles of the machines they are operating; more than that, they will become skilled in utilizing machine elements. Our greatest need is for all of us to adjust ourselves and our ideas to this fact.

This fact of our technological knowledge and skill should encourage us, for it automatically points out

to us who our enemy is in this Total War. Our enemy is any person or way of life which dictates that we must do by hand that which we can do by machines and extraneous power, and who or whatever system that 'makes money' off our labor, through the medium of a price and restricted distribution.

War has accurately been called 'the passion of Death.' The victor in this war will emerge the master over science. If that victor has been conditioned to ignorance or suppression of mechanical techniques, or is engaged in politics, or manipulates exchange in the market place, he and his group of followers will most surely murder science. They will do away with all scientific research and with the courageous men and women who might work at it.

On the other hand, if that victor is a group trained to operate our physical equipment in accordance with the principles employed in its technological design, then this group will automatically free science from the ages of former interference control. That interference control, which in recent years has attempted to become more and more pressing, we define as fascism.

Science, once it is free from fascist control, will be able to correct our centuries old social deformation, known as poverty in the midst of

plenty, our human toil in so very weak competition with our extraneous energy, our diseases, where sanitation and health could make us happy. Those men and women at the machine shop bench, production operators, patternmakers, technicians in all fields of military and civilian activities—these are the ones who have the power to choose *technology* to be the victor. It happens to be the first time in history that they have had this opportunity because never before were they trained for technology in such great numbers. They are not real Americans if they permit a multi-fying community of fascist interests to control them.

Who Are the Fascists?

How can the strategic term 'unconditional surrender' be applied to but one group of people—the axis alliance—and only on the bloody battlefield, when these same two physical forces—fascism or rule by decree, and technology or rule by the physical design—involve the internal structures of all nations of the world and all the communities of the United States with hardly a single exception?

The battlefield with its blood and horror is but an emotional symptom, a social tantrum, as the one progression, fascism, aging itself into senility, attempts to intrench its inertia against which the other progression, technology, must advance. The actual conflict exists between the pressing emergence of a new social doctrine and the ages old, obsolete folkways and traditions, inherited from our

dead agrarian past in our daily practices in our various home towns all over the nation.

It is each citizen's personal, patriotic obligation to find out who the fascists are and *why* they are that way. He may find out, if he is honest with himself, that he is unknowingly one of them. And it is our national, patriotic obligation to either educate our native born fascists, or if that seems impossible, to let the march of events liquidate them in the same manner that the march of events is liquidating their private enterprises. You know the people who have been forced to climb on the government subsidy wagon. Are you one of them?

No one, and no government, under the system of private initiative and private enterprise, can rejuvenate for very long the era of industrial expansion to which the fascists have tied themselves hand and foot. The fascists have to discover that fact for themselves, either the easy way by education, or the hard way by eventually going through social bankruptcy.

Design Is the Essence of Function

In 1941, *Harpers* magazine published an article by George W. Gray. This article told of an experiment at the Rockefeller Institute of Medical Research. This experiment was not conducted to regain a woman's youth, but with an eighteen year old dog serving as the laboratory guinea pig. He was a feeble creature, hardly able to stand up to eat. Dr. Alexis Carrel decided to change the dog's blood in the attempt to rejuvenate him. He

extracted the blood, washed the red cells, compensated with a chemical fluid for the quantity of blood washed away and then replaced the red cell blood for that which had been senile blood. The old dog became a new dog. Instead of curling up in a corner he ran and barked and gayly associated with lady friends. He acted much as our Price System is acting today under the forced stimulation of monetary injections into the arteries of commerce.

But by the time the dog's rejuvenated blood had absorbed the accumulation of age-produced poisons, while he had been enjoying himself, poor doggie was again old. Dr. P. Le-Compte, who first told the facts to the public said: 'Repeated removals of the old blood and its replacement with new serum had only a temporary effect of rejuvenescence.'

This same article told about the famous Steinach and Voronoff operations on old men. The operations 'were followed by indubitable cases of improvement in appearance and general condition and by the revival of the sexual function, but the grafts withered and were absorbed, the other changes relapsed, and rejuvenescence was temporary.'

Within the light of science we need to understand two things: (1) Why is rejuvenescence but temporary in older mechanisms? (2) Why cannot our Price System be permanently rejuvenated as the many post-war planners would have it?

The reason that rejuvenescence is but temporary is in the fact that cer-

tain *internal* balances are always the main design of the totality of anything. These balances may shift but they must always be in the designed relationship to the purpose they are serving. The power to do a given thing must be *easily* transmitted from its point of origin to its point of use; the driving function must be in unison with the driven function and vice versa. When internal balances have gone haywire, whether through wear or some act of positive dislocation, that person can no longer channelize his energy into optimum power; or if the example is an inanimate mechanism, it can no longer function properly. Rejuvenescence cannot create permanent internal balances because it cannot restore that which has been used up. The laws of thermodynamics are unchangeable; they function whether or no. No man has yet outlived nature's physical choice for his particular span of life, nor has any other mechanism or system.

Here is a good definition of a machine; we can aptly apply it to the Price System as a machine *gone bad*. 'A machine is a combination of elements which transmits motion from one to the other until the desired force and motion are delivered at the point of productive work. The various elements must be held in their designated places or paths and allowed to move as required by the design.'

Why do we say that the Price System has permanently gone bad? The Price System *was* a workable mechanism before technology expanded, but

now technology, one of its prime internal elements, can no longer be combined in a pattern which will transmit the desired force and motion at the point where specified work, our war requirements, will be accomplished.

In other words, what should be the internal balances of the Price System have already become too greatly unbalanced for the optimum operation required by this twentieth century conflict, and the peace that must *grow* out of that conflict. Peace will not be a rootless and separate event. That is why we can accurately say that all post-war planners have started on the wrong track.

Up until December 7, 1941 the native consolidation of spiritual, political and economic rackets into a major oligarchy, the fascists, was able to balance our technology, however poorly, within the Price System. Since then our highly developed technology no longer fits within the Price System machine. It can no longer be driven in alignment with the fascist driving proclamations; instead our technology has become the driving power.

A Word to the Wise—

Fascism is on the skids in Europe. It was American technology that made it possible for the Allies to chase the Axis out of Africa. It is American technology that is helping Russia. It is American technology which is preparing itself for the Pacific struggle. Gather these facts together, then try to answer this question: What does unconditional surrender mean? Who and what terri-

tory is going to surrender unconditionally? Get into the habit of wording your concept of 'unconditional surrender' so that you can easily substitute its intelligible definition.

How do the fascists in America define 'unconditional surrender'? How do the fascists in your neighborhood, at your place of work, define it? They just don't; they totally ignore the facts which give it meaning.

They ignore the fact that Hitler, Mussolini and Hirohito established a geometrical relationship, a triangle; that the fascists in your home town too have established a triangle. In the international triangle whoever is behind Hitler is angle A; whoever was behind Mussolini was angle B; and whoever is behind Hirohito is angle C. The relationship of these three fascistic 'fronts' to the political, economic and spiritual rackets in the international triangle are no different from angle A, angle B, and angle C in your home town. Just who is angle A, angle B, and angle C in your home town? What are their names?

Detach all your sympathies and affections, where necessary even your family loyalties, for we must consider this a geometrical problem which must be understood before we can prosecute this war successfully. Have you forgotten the elementary fact that any two or more triangles having the same shape, although different in size, are said to be similar triangles? Never forget, similar triangles always have two corresponding 'parts'—altitudes, medians bisectors, in the same ratio as a pair of corresponding sides.

And it is a most important geometrical fact that 'corresponding angles of similar triangles are respectively equal.' In other words, a Penny fascist in a Penny town is just as vicious, as dangerous in that Penny town as a dollar fascist is in a dollar town, as the fascists within the Allied set-up are to the Allied nations, or as Hitler, Mussolini and Hirohito were to the area of the Axis alliance. The sizes of the respective areas have nothing to do with certain persons' angular positions or functions.

Every day our technicians are discovering easier ways to do things. The simple fact of these discoveries is part of the continuous process of applying the superior powers of the lever and the inclined plane with the accompaniment of gears, pulleys, cams, threads, machine bearing and other mechanical elements. The fascists accept these discoveries, without digesting their real significance, as just additional means whereby they may, both now and in the future, 'make money.' The fascists are too ignorant of science, too blind to see what is going on to recognize this growing technology and its growing capacity; so they sentimentally consider themselves to be honest-to-goodness Americans when they fight to preserve their Price System.

Acres of Diamonds

War is the passion of Death. It will eventually yield a victor, and the vanquished will have performed 'unconditional surrender.' The *why* for it is basic in nature, So that America will not be the continent

to suffer unconditional surrender, America must continue to be a body in uniform motion in a technologically straight line. America's uniform motion in a technologically straight line is toward more and more technology. Very simply stated this is: There shall be more and more people coming within the technological pattern.

Private enterprise cannot possibly install more and more technology without completely wrecking Private Enterprise. Actually, Private Enterprise completely wrecked itself when it, all over the world, instigated World War II. With each new technological installation, the internal balance within the Price System, that is, the relationships between the driving force and the driven force, changed. It was the increased frequency of oscillations which wore the Price System out.

Then who must install the necessarily complete technological pattern? The people themselves, the augmenting number of operators who have become skilled in working with machine elements; they must subscribe to the Total Conscription of Men, Machines, Materiel, and Money, exacting National Service From All, and yielding Profits To None. When in the course of events it becomes definitely necessary for one people, Americans, to change its mode of physical operation, it is treason for any minority within that people to obstruct such change.

Unconditional Surrender begins at home. Unconditional surrender

means that the Price System mechanism, as a way of producing physical operations, shall be abandoned beyond the possibility of resurrection; that all persons as individuals or groups, who have held as their vested territory any physical equipment, patents or ideas, immediately shall yield them to the common welfare. Unconditional surrender means that

from thence forward the actuality of living shall be based solely upon the technological possibilities, with each man's relationship to God his own affair. When we set our continent in order, then and only then, may we expect unconditional surrender to occur as the basic morale in the other countries of the world.

Divided We Fall

'One cannot move about Washington without bumping into the fact that we are running two wars—a foreign war and a domestic war. The domestic war front is in the various war boards. Every great commodity industry in this country is organized nationally, and many of them, perhaps most of them, are parts of the great national organizations, cartels, agreements, which function on both sides of the battlefield. Here in Washington every industry is interested in saving its own self. It wants to come out of the war with a whole hide. One is surprised to find men representing great commodity trusts or agreements or syndicates planted in the various war boards. It is silly to say New Dealers run this show. It's largely run by absentee owners of amalgamated wealth, for the most part these managerial magnates are decent, patriotic Americans. They have great talents. If you reach them in nine relations out of ten, they are kindly, courteous, Christian gentlemen. But in the relation where it touches their own organization, they are stark mad, ruthless, unchecked by

God or man, paranoiacs, in fact as evil in their design as Hitler. They are determined to come out of this war victors for their own stockholders, which is not surprising. These international combinations of industrial capital are fierce troglodyte animals with tremendous power and no social brains.' (William Allen White, editor of the *Emporia, Kansas Gazette*, 5/15/43).

At a recent session of the House of Representatives, the food subsidy bill was under discussion and Rep. Clarence Cannon (Dem. Mo.) had the floor. These are his words: 'I have always followed Mr. Green on labor bills. But this is not a labor bill. This is a farm bill. On this bill I will follow the farm leaders.'

There you have it, cold turkey, a frank submission to the dictates of minority pressure groups. There's no poppycock about leadership or an inquiry into the facts. It's a straight routine of first counting the noses involved in any minority group proposal, then representing it accordingly. Is that why they call it the house of representatives?

Three Recipes for Going Crazy

by Publications Division 8741-1

Safe As A Bug In A Rug

A SMALL company manufacturing war materiel in the Detroit Ordnance District reports as follows. All its employes are covered by a blanket industrial accident insurance policy. Before getting the policy, the company had to set up certain rather strict safety mechanisms and policies. In addition to this they are required to meet the State safety standards, those of the city of Detroit, the City Fire Department rules, the City Health Department regulations and those of the State Health Department also. Well, one otherwise fine day along came a delegation of U. S. Army Officers on a National Safety Standards' drive, sponsored by the Army. The management was given to understand that its cooperation was expected—or else. This last safety drive being the seventh and each one being sponsored by a different branch of authority, the management is now wondering who'll be the eighth and if there are any new safety wrinkles out lately.

'They Can't Put You In Jail for That'

Another small company, over a period of time, received a bale of forms and reports to fill out from the various Government agencies. There were forms on everything imaginable connected with their part of the war business from raw material priorities to labor-management relations. The

ability of the company to fill out these forms declined in inverse ration, as the flood of paper rose. Finally they got a hot letter from the WPB accusing them of not cooperating with the war effort. Here is the company's answer:

War Production Board

Washington, D. C.

Attention: Mr. T. K. Quinn,
Director

General War Production Drive
Gentlemen:

Unfortunately we are not a large corporation operating under cost-plus and therefore supplied by a benign government with endless droves of idle help. Our office and supervision personnel are over-taxed with work that has to be done to keep the wheels rolling and we, therefore, have adopted an attitude concerning the endless requests for reports and cooperation from all types of political interference control agencies that is simple and direct.

If they can throw us in jail for not doing it, we will gladly cooperate. If not, No. Will you kindly enlighten us on this point?

Yours very truly,

H. V. Wilkie

Even a Mule Has Hindsight

Another small company made a profit of \$540,000 in 1942 on war

contracts. Along came the Internal Revenue Department and took away considerably more than half of it in the form of taxes. This was all right, as it was expected, and still left the company with a neat little nest egg. However, in marched a renegotiator one day and demanded to see the company's contracts. Upon due examination, he altered clauses here and there and sliced down the gross profit to a net loss of \$130,000. The company protested that it had already paid out most of its profits in taxes and didn't have the money any more. The renegotiator replied that was none of his business but concerned the Internal Revenue Department. The company president was advised to try to get a refund on his taxes but would be expected to repay the Government his excess profits on the renegotiated contracts nevertheless.

If they get a refund on their taxes it may be possible to pay the Government back. If not, they're in the hole deeper than ever. In the meantime the company has accumulated a stockpile of Army-Navy Inspector's rejects. The product is of a type that can be sold as post-war merchandise. The upshot of the whole affair is that the only source of profit left to the company now is its stockpile of rejects. The stuff wasn't good enough for war use but can get by in the civilian market. After reciting his tale of woe to a Technocrat, the president of the company remarked: 'The more I think of it, the more I think the Government has done this whole war production effort wrong. *It*

should have frozen the whole war effort at the beginning.'

This was a beautiful opportunity to say, 'I told you so.' But Technocracy is not interested in preaching. Neither does it have any brief for either small, medium or large business; and no condemnation for Government renegotiation or tax collection agencies. The point is that nobody knows what the score is because there is a multitude of small conflicting plans for regulating production and distribution, but no overall design for national operations.

If you want to go crazy, here are three good recipes, but there are many others. Every American who thinks he can beat the American Price System has a good recipe for going crazy. It matters not whether it's the lone wolf worker trying to get rich by the sweat of his single-handed labor; the cockroach 'capitalist' shopkeeper performing his interference functions in the distributive mechanism; the small business man ground beneath the upper and nether millstones of a chaotic economic system; or even the astute representative of large monopoly enterprise scheming for mid-war profits and post-war cartelization.

There is only one highway to individual sanity and security in America today. That is by way of Technocracy's design of Total Conscription of Men, Machines, Materiel and Money with National Service from All and Profits to None. Collective security is the answer to all individual problems.

Inquisition At Detroit

by R. B. Langan

Detroit Is As Detroit Does

THE city between two lakes is now engaged in the production of bombing planes, airplane engines, parts of all types and war equipment in general. What though the pay-rolls are padded, the inventories are inflated, the workers are falling over each other and the factory crap games are heavily patronized during working hours; nevertheless, the war materiel rolls out of Detroit plants in staggering quantities. The fact that production increases its tempo while accompanied by the best planned methods of waste is a tribute to American technology. Of course, the waste adds to the profit, which makes it good business. Detroit is not unique in this type of social behavior. It is a national characteristic of the American Price System.

Besides the production of physical goods, the fame of Detroit has been polished bright by its efforts in the intangible field of art and early Americana. That nostalgia for the years that are gone forever, which seems to be a national trait, finds a loud expression in Detroit. There one can see Greenfield Village where the past of America has been frozen for the edification of the present and future. It is worth a visit if only to learn what America has escaped from, and in small part how that escape was accomplished.

There is also the Detroit Institute

of Arts, famed for its mural paintings. This museum, sponsored by the liberal arts schooled parvenues of this area, was understandably built in Renaissance style. This architecture is completely out of harmony with the characteristics of a modern industrial city. It is symptomatic of the social thinking of most Americans, i.e., completely out of harmony with the realities of the Power Age.

After vegetating for years as one of America's many second-rate art museums, those with the directive power in Detroit decided that it needed distinction. So they engaged the talents of Diego Rivera, called the world's greatest living mural painter.

Rivera came to Detroit in 1931 and spent a year painting frescoes on the walls of the Garden Court in the Institute of Arts. There are 27 panels in all on the four walls. The brochure of the Institute says that Rivera was 'determined to picture our gigantic industrial culture, and then to follow it back into its basic elements.' If this is a correct statement of the end sought after, then Rivera's murals must be classified as complete failures.

It is true Rivera sees form and movement in industry rather than mere atmosphere. This is something. 'He honors the engineer, the mechanic, the scientists. He used life as his model.' The frescoes are called 'magnificent in design and admirable

in detail. But in the last analysis their power lies in another thing—their largeness of conception.' This is extravagant praise indeed. Let's see what it all amounts to.

If You Want To Do, You Must Know

Before one can form an accurate appraisalment of the Garden Court murals, one must know the culture depicted and the physical America to which it is native. It is not sufficient to look at them from the viewpoint of artistic technique alone. Rivera 'used life as his model' but nowhere does he tell the story of energy on which all life depends. The mere picturization of a lump of coal, a few other minerals and an energy-converting device here and there, crowded in between a multitude of workers, does not tell the story.

The Institute murals are too much concerned with people and too little concerned with the giant forces producing the trend of events on this Continent. This kind of art is not American. It is hyphenated.

A visitor comes away from the Institute with a feeling that there is much more to the story of our 'industrial culture and its basic elements' than Rivera pictured.

In the culture of the Power Age, physical wealth is not produced by human toil and hand tools. It is produced by energy and technology. Therefore, while humans are always necessary in an attendant, accessory or supervisory capacity to the industrial machine, their relative importance as producers declines, while the necessity for integrated operation of the entire mechanism increases.

This necessity dictates a design. Thus, while the Rivera murals completely fail to 'picture our gigantic industrial culture and then to follow it back into its basic elements' they also completely ignore the future of that industrial structure. The method of American technology pictured in these murals is accurate enough. But it hangs in the air by itself, fully developed, without birth or puberty, nor any hint of a probable future.

The art of yesterday is mainly the art of people. The true art of America must be an objective art of things and events in the real physical world in which we live, in addition to people. To portray the art of America, it is not enough to 'honor scientists, engineers and mechanics.' One must tell the whole story and let the facts convey a proper contempt for all the phony values of this Price System. More, such an art must project itself into the future, on the basis of that which is most probable, and in harmony with the parallelism of events.

There Are Murals and Murals

Detroit is big, its streets are clean and spacious and seem to reach out toward an ever-receding horizon. Its industrial conceptions are large and their execution lags not far behind. Surely, somewhere in this archtypical industrial center one should be able to find some real American art that truly represents the science and engineering that is germane to the physical North America in which we live!

Yes, there is such art in Detroit, but it cannot be found at the Institute of Arts. Such art as portrays what America is now, how it came

to its present estate and where it is headed, cannot flourish in any Price System environment. Pretty roses may grow out of dung hills but integrity cannot exist 'where commerce long prevails.' Authentic American art that will meet the specifications outlined can only rise out of the most authentic, indigenous, American non-Price System environment. That, too, exists in Detroit.

The finest display of modern American Art-science in the city between two lakes is in the hall of the *Detroit Section of Technocracy Inc.* at 9108 Woodward Ave. This organization is neither an art school nor a museum. It is a dynamic research-educational body founded, staffed and operated by Americans drawn from all walks of life. Technocracy Inc. is dedicated to the installation of a Continental design of operations for the production and distribution of abundance and security for all citizens. As such, the function of the Detroit Section is to inform all citizens in its area of the irreversible trends that are shaping America's destiny and thus affecting the individual fate of every American.

The Section Headquarters' interior was designed and constructed to illustrate with graphic realism the Story of America, its past, present and future. There are some 30 odd picturizations, all told with a half-dozen mural paintings. These paintings illustrate North America as the number one technological potential of the world and its possibilities in a real American way of life when it is operated by scientific methods.

There is a sequential order of progression in the Technocracy murals and pictures. In other words, it is a story of America's greatness and littleness. One must start at the beginning and stick to the finish.

The Greatest Story Ever Told

There is, first, the long static ages of human toil, hand tools and scarcity the world over. Then the slow growth of knowledge about physical laws. In time comes the first stages of the industrial revolution. Eventually, the Power Age culture of America arrives. Running through the veins of this complex development are the two factors, technology and energy.

The one thing that chiefly distinguishes man from all other animals is his ability to convert and use energy derived from sources outside his own body. Behind all modern technology is extraneous energy derived from coal, oil, gas, wind and falling water. The story of its rate of increase of conversion and use is basic.

Accompanying it are the operating characteristics of the system of trade and commerce, called the Price System; the superimposed, political and social structure, its enforced social regimentation of the human components involved, and the wide-spread mental obeisance to abstract ideologies which have no real existence in the system itself.

Then we have the net end results, such as growth in population, mountainous rise of debt, increase in production but enforced scarcity in distribution, rise and eventual decline

in total employment, constant decline in manhours per unit of production, widespread want in the midst of potential abundance; a whole host of secondary social problems generated by the system, such as crime, ignorance, disease, etc., and the inevitable shrinking of all the artificially concocted 'values' of the system back into the nothing from which they came with the irresistible forward march of technology. The human beings involved become less and less important and necessary except as a means of exploitation in any Price System.

After spending an hour in Technocracy Hall at 9108 Woodward Ave., one comes away with a new sense of citizenship. America is great; it is only some of her people who are little. This is a land of sleep-

ing giants, with a potential future that almost beggars description. One comes out knowing that he, or she, as an individual American can participate in that future. But it must be won. The visitor is made to realize that America has a big job waiting for her citizens and that the great future of this motherland will only be realized to the extent that her citizens dedicate themselves to the unfinished task that lies ahead.

Of such is the true art of America, illustrating the past, living in the present and pointing the way to the future. Let the dilettantes play around with decadence. The alert American who is aware of the social obligations of citizenship in the Power Age will seek out that which is closest to the heartbeat of America.

The American Language

On June 19, 1923 the Legislature of Illinois passed an Act reading as follows (*italics ours*):

WHEREAS, since the creation of our American Republic *there have been certain Tory elements in our country* who have never become reconciled to our Republican institutions and have ever clung to the traditions of king and empire; and

WHEREAS, America has been a haven of liberty and place of opportunity for the common people of all nations; and

WHEREAS, these strangers within our gates who seek economic betterment, political freedom, larger opportunities for

their children, and citizenship for themselves as Americans; and . . .

WHEREAS, the name of the language of a country has a powerful psychological influence upon the minds of the people in *stimulating and preserving national solidarity*; and

WHEREAS, the languages of other countries bear the name of the countries where they are spoken; therefore:

Section 1. *Be it enacted by the people of the State of Illinois, represented in the General Assembly: The official language of the State of Illinois shall be known hereafter as the 'American' language.*

Bankers Distribute Revolutionary Literature

by The Peripatetic Technocrat

Even Nice People Do It

Probably 9 out of 10 people walking the streets of America's cities are carrying revolutionary literature around in their pockets and don't know it. The Federal Reserve System and every bank in the U. S. have been distributing this radical material for the last seven years or so. It is turned out in the millions of copies by the U. S. Mint.

All one has to do to get a supply of this inflammable literature is to hire out on the payroll of some corporation, whether padded or not. They will turn over a supply of it to you on your first payday. Of course, there are quicker and easier ways to get the stuff, if one is of a mind to, such as clipping coupons, cashing rubber checks, or some other short cut to Easy Street on the illicit fringe of the Price System. But most citizens are rather dull and law abiding to boot, so they prefer the harder way of working for theirs.

The revolutionary literature referred to is none other than our good old one dollar bill. It is nationally respected, one might almost say worshipped, and keenly sought after by every citizen. Few suspect that its apparently innocent appearing surfaces contain what amounts to an epitomized history of civilization up to date and an accurate projection into the future.

On the front side is an imprint of the head of George Washington, the Father of His Country. How true that old saying is: 'First in peace, first in war, first in the hearts of his countrymen.' The saying refers to George Washington, not the one dollar bill. One could easily assume the opposite from an observation of the behavior of people with regard to money.

The first message carried by the dollar bill is on the front side. It conveys the information that there is on deposit in the Treasury of the U. S. one silver dollar payable to the bearer on demand. It states also that the certificate is legal tender for all debts, public and private. Nothing startling about that, although there is more to it than meets the eye. These statements contain enough material for an enlightening article on the nature of money and debt and the ancient professions of money changers and debt merchants. We'll not go into that now though. The point we're trying to get to is on the reverse side of the one dollar bill.

The Unfinished Job Ahead

Take one out of your pocket, turn it around and study it while you ponder the significance of the motto printed boldly upon the reverse side of the Great Seal of the United States. '*Annuity Coeptis Novus Ordo Seclorum*' is imprinted above and below the unfinished pyramid. This has a pro-

found meaning for America today. It is written in the dead language of Latin which neither time nor human use can change through the ages. It means exactly the same thing today that it did in 1776 when it was adopted, note the Roman numerals at the base of the pyramid.

This Nation was founded in 1776, and the building of the unfinished pyramid began. For the first 160 years of our national existence the reverse side of the Great Seal was not imprinted on American money. Eight years ago the Government decided to use both sides of the Seal on the dollar bill. It is fittingly appropriate at this time.

The Founding Fathers must have known that the Nation they were building could not be completed by them. So they left the pyramid unfinished with the apex pendant above. Within the pyramid's peak is the all-seeing eye. This means that a greater wisdom than theirs would have to come along in the fullness of time to finish the work which they had so ably started. That time has now arrived.

They Know What They Want

'... By and large, Americans are the most mechanical people in the world, and so the most alert to physical cause and effect.' Excerpt from editorial under that title, *Chicago Daily News*, 11/17/43.

"Give me matter and motion and I will construct the universe."—Rene Descartes, 1596-1650.

As the juggernaut of technological war rolls on into its fifth year the motto imprinted on the Great Seal, and so boldly adopted by our young Nation, begins to acquire its first real significance for the American people. History records the rise and fall of many Nations, Cultures and Civilizations. As man progresses onward through time, space and events he leaves the old order behind him and takes up with the new, or else becomes extinct. Where is the Cro-Magnon race now; or the numerous civilizations of the past that have waxed and waned?

So it always was and so it always will be. Men and Nations must either go up or down, backward or forward. This is the rule of change. America once faced the future boldly; perhaps it will do so again. The Founding Fathers of this country gave us a watchword to go by. Nearly every person carries it around in his pocket book. The motto on the reverse side of The Great Seal of these United States is: *'Time Makes Way For A New Order Of The Ages.'*

A Definition

'My own summary of the "private enterprise" philosophy is this: One man's meat is another man's flesh.'

Letter to the Editor, *Chicago Sun*, 11/29/43, written by Ervin A. Henning.

The institution of private enterprise for private profit is conducted at public expense.

Industrial Birth Control

by Edwin A. Lahey

Reprinted by Permission of the *Chicago Daily News*

Calls Industrial 'Birth Control' Man's Most Ironic Work in Last 50 Years.

Industrial birth control is probably man's most ironic achievement. For the last half century it has meant that in a great period of mechanical achievement development, we have been able to restrict production through cartels and monopolistic price controls. Henry Wallace summed up the tragedy of restricted production in his Detroit speech last July, when he reminded critics of the 'baby pig killings' that countless tons of unborn baby pig iron had been aborted by the economics of monopoly.

The story has been told well enough. The files of the anti-trust division under Thurman Arnold, the voluminous record of the monopoly committee hearings in Congress, the history of the Fair Trade Commission and other sources tell what has happened to production since the coupon clippers became dominant in the control of industry.

The aspects of restricted production are all around us in our daily life.

Plaster Monopoly-Produced

The plaster on the walls of your home is produced under monopolistic, price-fixing conditions. The price of

the gypsum which goes into plaster increased 100 per cent between 1929 and 1939, despite the great depression.

The shoes you put on in the morning are made on machines that the shoe manufacturer must rent, and cannot buy, from the corporation which controls shoe machinery production through patent ownership. The corporation, by virtue of its leasing arrangements, has an obvious influence on price and production policies.

The streetcar in which you rattle downtown in Chicago is flat-wheeled because a tight little coterie of mortgage bondholders are better off as long as the city lacks a modern, costly transportation system.

Farm Tools Price Controlled

The farmer has a barnful of machinery which had a price flexibility of 15 percent during the depression in which the prices of the farm products had a flexibility of 65 percent.

President Roosevelt a few weeks ago expressed opposition to any post-war tariff on rubber, which might protect our wartime synthetic rubber factories. But he ignored the important fact that even the price of crude rubber was always kept at artificially high levels through centralized control of the trees by the Dutch and British. The international aspects of

monopolism are fresh in everyone's mind, with the Truman committee of the Senate of the cartels of German, British and American corporations, in which world areas were split up and compacts made to restrict production.

85 Cents or \$45 Per Pound

And only a few days ago Assistant Attorney General Wendell Berge told a Senate committee how the chemical industry sold a certain plastic for industrial use at 85 cents a pound, but charged \$45 a pound for dental use. When dentists got smart and began purchasing the plastic from industrial users, one of the great chemical corporations proposed that the industrial product be spiked with the addition of arsenic, which would make it unacceptable for dental use.

Some years ago the maker of a well known safety razor blade was worried about imitations which were

just as good and much cheaper than the original blade. This manufacturer set up a plant of his own to make an imitation of the imitation. The fake imitation was so bad that the customers came back to the original blade.

There never was a better time to cogitate about these phenomena, because we have given up the vicious practice of industrial birth control during the war. Our industrial capacity is staggering our own imaginations. If the implications are made plain, it should not be too difficult to stir a demand for full use of our productive facilities for peace-time products.

Editor's Note: As to whether or not 'we have given up the vicious practice of industrial birth control during the war' as Mr. Lahey seems to think, we refer the reader to the leading article in this issue. Let the facts speak for themselves.

The Last Shall Be First

'I cannot consider that production has met its goal until we have met all overseas demands and have fully equipped our troops in training. I go beyond this and say that we are not prepared for total war until we have accumulated a substantially strategic reserve of all important weapons of war.'—Lt. Gen. Brehon B. Somervell.

'In the first three months of this year the United States had more fires than in all of 1942, which in turn was the worst year in 25 years. Consider the fire that destroyed a grain elevator in Minnesota. The money

loss was \$1,350,000 but that was only a minor part of the disaster. That one elevator contained sufficient bread rations to feed an army of 700,000 men for an entire year.' *Colliers* (9/25/43).

Mechanical sugar-beet harvesting machines may replace men almost entirely after the war. This mechanical harvester is the invention of a Pueblo, Colo., beet farmer.

America has 2,264 industrial research laboratories today; in 1900 it has less than a dozen.

Technology Marches On

by Research Division 8741-1

Smaller and Better

Production of electronic control tubes is running 11 times greater than in 1941 at the Westinghouse Lamp Division Plant, Bloomfield, N. J.

The Selas heating plant used in American bombers to keep the cabin warm at the way-below zero temperatures in the sub-stratosphere, weighs but 8 pounds. It takes up only 1/5th of one cubic foot, yet delivers 300 cubic feet of hot air per minute. Its thermal efficiency is 87 percent.

The new Wright 'super-Cyclone' aviation engine contains the potential energy of 2,200 horsepower within a diameter of only 55 inches, the same size as that of the original 525 horsepower Cyclone engine sixteen years ago. The early motor had 9 cylinders, the new one 18. Four of the latter will power each of the Lockheed Constellation 60-passenger cargo planes built for the Army Transport Command. What makes this increased power in the same diameter possible? New metallurgy, including aluminum, nitralloy, etc., and a supercharger, so that the weight per horsepower is slightly over one pound. (The average workhorse, we would like to point out, weighs about 1,500 lbs.).

'At the end of the war we will have a tremendous aluminum capacity in Canada, about 12 times that of prewar capacity . . . In about 5 days, at present rate of production we could fill all the probable annual re-

quirement for postwar airplane production.' George C. Bateman, Canadian Metals Controller, in *Iron Age*, 11/11/43. (Are Canada's aluminum plants to be scrapped then?)

7000 White Horses

The world's largest electric motor has just been completed, in America, of course. It was built in one of the only two plants in the nation where it could be built, General Electric's works in Schenectady, the other being Westinghouse in East Pittsburg. The motor weighs 500 tons. It is rated at 7,000 horsepower. It is 44 feet long, 16 feet in diameter and 13 feet high.

Electrical engineers who designed it say the motor could lift a 1,350 ton destroyer at the rate of 200 feet per minute, but it won't be used for that purpose. It is now being installed in a new steel mill (built by Defense Plant Corp. of the U. S. Government) at New Geneva, Utah. Its power will drive machines which are designed to cut 10 ton steel slabs into 200-foot lengths.

What the publicity failed to mention is that this motor will do the work of 70,000 men, a great help in the wartime manpower 'shortage' but a greater help in peacetime toward solving our production problem.

What Won't They Do Next?

Last spring the Division of Forestry of the Illinois Department of planting machine in Mason State

Conservation put into use a tree-forest. The machine is pulled with an ordinary farm tractor and can be operated by one person. Approximately 600 trees per hour were planted. A check immediately after planting indicated that only 3 per cent of the trees were improperly planted. And a preliminary check of all plantings during the middle of July indicated an average survival of 88 per cent, which would 'have been' better if graded stock had been used. Additional changes are being made in the planting machine, and it is hoped that these changes will increase production to approximately 1,000 trees per hour.'

Three records in electric power had been set in the weeks before this issue

of the *Great Lakes Technocrat* went to press; each record was due to be broken by the end of 1943, however. They are:

1. All-time high electric power generation by U. S. central stations was reached the week ending Nov. 20, with a total of slightly more than 4,500,000,000 kilowatt-hours.

2. In the same week power output of the Commonwealth Edison plants in the Chicago area reached a new record of 195,000,000 kilowatt-hours.

3. On Oct. 26 the Consolidated Edison System stations in New York were loaded with 2,000,000 kilowatts for the first time, and in the following 24 hours output totalled 36,342,000 kilowatt-hours.

Technology Marches On!

Room For More Technology

Three to eight million cubic feet of methane gas is being pumped out of the average U. S. coal mine daily. This gas, which is wasted into the air, has a heat value of 100 to 300 tons of coal. *Progress Guide*, 8/43. Any city in the U.S. has in its sewage disposal system methane gas, which can be harnessed to produce on a 50,000 population basis, 2,900 horsepower-hours of labor daily, yet the latest count shows only 180 such sludge engines in use in the country. *Scientific American*, 9/43.

Dept. of Agriculture figures show that the average U. S. cornpicking machine is made use of only 104 hours a year, or an overall load factor of .01, and the average combine

is in use 127 hours, a load factor of .015.

'Kaiser (Henry Kaiser, West Coast industrialist) suggests that the government should give new contracts to the manufacturers who produce with the fewest man-hours per unit.' *Business Week*, 9/18/43.

Men and Machines

'When men are left to just talk, as they do in Washington, they seem unable to act, and the debate tends to become more ingrown.

But team up men and machines, and give them a job to do, and your faith in the capacity of the human race rises.' Raymond Clapper, in his column in *Chicago Times*, 11/24/43.

A Primer of Technocracy

by Education Division—8741-1

Energy is Life

IN the beginning there was energy. This physical force animates and permeates the entire Cosmos. It manifests itself in many forms on various levels of activity and may be called by different names. But, it's all the same primal stuff and can neither be created nor destroyed by any means we know of. Energy is the basic material out of which all organic and inorganic things are composed and by which they move and have their being. In the last analysis, matter itself is only a concentrated form of energy. It is energy at a lower or different state of activity. There is no manifestation of matter apart from energy, or vice versa. Energy is absolutely primary; it permeates all life and activity as we know it on this earth. Finally, being a physical thing, it can be measured and controlled.

Interstellar space is being continuously filled with a constant flow of energy from millions of celestial generators. The sun also has been radiating energy for billions of years. The earth, like all other dark bodies, is immersed in this cosmic radiation and has been receiving, and absorbing, large amounts of it for a long, long time. Of the total amount of energy radiated by the sun, the Earth receives only about one two-billionths part, yet without it this planet would be a frozen, lifeless

waste. About one-third of the energy received from the sun is constantly being reflected back into space, by the belt of ionized gases surrounding the earth's outer atmosphere. Of the remainder, a part is radiated off as spent, long wave heat radiation. Another part is absorbed and used in the processes of nature, such as evaporation, precipitation, wind and other varied manifestations. The balance is stored up in the form of coal, oil, gas, wood, etc.

Estimates of the age of the earth vary. Perhaps it was about one billion years ago that it began. It is likely that the earth was thrown off from the sun due to the tidal pull of some large passing body. This is one of the most commonly accepted views. In the beginning, it was a ball of fire itself, radiating energy into space. Gradually it condensed and became cooler. More than half of all geological time had passed before any life appeared on the earth. That was in the Paleozoic Age, about 500 million years ago. Life began in the warm prehistoric seas. As time went on geological changes occurred, some of the marine plant and animal life became exposed to the dry land, and gradually adapted itself to that environment. Since then, life has assumed a multitude of forms, undergone a great variety of changes and spread all over the earth.

The low-skulled ape-like creatures who were the predecessors of man, appeared on the scene about one million years ago. Several skulls of this man-like ape or ape-like man have been found but the records are scanty. We are not concerned here with whether man evolved from the ape or vice versa. About 250,000 years ago the first true man appeared. He has been named the Neanderthal man. He lived in caves, built fires, left kitchen middens behind him and buried his dead; consequently more is known of him. The Neanderthal man was succeeded by a higher type called the Cro-Magnon. In turn, he seems to have disappeared into the mists, but left behind him paintings on the walls of caves, which retain their colors to this day. It was not until less than 10,000 years ago that some sort of stable social life appeared, based on agriculture. This is the accepted evidence of man's progression and it is fairly well substantiated.

For 500 million years, ever since the earth became cool enough to store energy instead of radiate it, the factor of energy utilization has been basic on this earth. Energy has supported life in all its forms through age after age of slow progression. The exchange of energy between life and its environment has been the physical means whereby such life has existed on this planet. Man, even more than lower forms of life, owes his survival and pre-eminence to his ability to capture ever more and

more energy and to convert it to his own advantage. Regardless of how far back we go in biological, geological or astronomical evolution, we find that energy is the omnipresent determinant of all physical things on this earth.

In the beginning, there was energy.

Eons of Scarcity

When man first learned how to make and control fire ages ago in the misty dawn of social life, he reached the first high point in his long and painful progression on this earth. When he learned the domestication of animals and plants and discovered the use of metals, he passed a few more high points. The use of fossil fuels and the invention of gunpowder marked the culmination of man's progression prior to the introduction of the first practical steam engine. These physical events were interspersed between long periods of barrenness. Each one followed the other in a more or less orderly sequence. Neither did they occur spontaneously. For, in the barren periods in between, there was a slow growth of knowledge of the physical laws of nature. Some of these events may have happened accidentally, as occurred later in the first vulcanization of rubber. But it can be said that the growth of knowledge which enabled man to take advantage of the opposing forces in his environment played an important role.

From first to last these events in the early stages of man's existence marked points at which he learned how to tap into that great ocean of

energy flowing ceaselessly throughout the universe and divert a part of it to his own use. The ability to divert and convert energy from sources outside his own body is the chief distinguishing characteristic between man and the animal world. This ability grew as his knowledge of physical laws increased. The benefits were reflected in his mental and physical status, in other words, his general welfare. By and large, however, the net gain was small. For thousands of years, the yoke of the past hung heavily upon the shoulders of mankind. It was a long, long age

of human toil and scarcity, a never-ending battle for a bare existence. Then came the re-discovery of America. Then came the steam engine. They were equally important, for here in America was found for the first time that necessary combination of geographical, geological, climatic and human resources required to apply the growing knowledge of physical laws to the means whereby men lived, on a grand scale. The stage was all set, and the curtain rose on the industrial revolution.

Next Issue—*Prelude To the Power Age.*

There Is a Big Job To Do

'Strange though it may seem, the facts are that from the standpoint of today's technology, the greater part of America's industrial system is now obsolete, and must be rebuilt!' Alfred P. Sloan, chairman of General Motors, in *Steel*, 11/15/43.

The present plant equipment of the United States has not been kept up to date. . . . Approximately only 4 percent of the entire industrial equipment of the United States is really modern in design and control. Yet, in spite of this condition, the technological equipment of the United States and Canada constitutes at this time the greatest known social force ever at the disposal of a human society.

This force must be organized for a planned objective under a unified control. Industrial mechanization must be installed on a Continental scale far beyond anything that we have known. America must move forward and mechanize to the limit.'

Howard Scott, Director-in-Chief, Technocracy Inc. in *Technocracy Magazine*, July 1940.

'The United States is not fighting this war for profit, and hence the government cannot afford to limit its thinking and planning to that of a profit economy.' Lyman Chalkley, head economic analyst of industrial engineering division, Board of Economic Warfare, 2/7/43.

Technocracy and Your Trade

by Organization Division 8741-1

Shades of Samuel Gompers

While tobacco products of all kinds, including cigars and cigarettes, are being turned out at a rate 35 percent greater than the last peacetime year, 1939, employment in the industry is still on the same downgrade it was marching on before the war.

The cigar unions, once so strong they elected a president to the American Federation of Labor, are no longer important. Machines now shred, mold, wrap, and package both cigars and cigarettes.

When you pay 17 or 18 cents for a package of cigarettes, you are not paying for tobacco nor for labor, as far as most of the cost goes. There is less than 2½¢ worth of factory wages and about 1 1/5¢ worth of tobacco in the average pack. Most of what you pay for goes for taxes, advertising—and in investment in new machinery. About 300 machines of one model (produced by the Link Belt Co.) would, if used at full capacity, turn out all of this year's cigarettes. This year is the all-time high of cigarette production in the U.S.A. about 240,000,000,000 according to count upon which taxes were paid. This does not include the millions being sent abroad to soldiers and sailors by the Government itself.

The first continuous long-filler cigar machine was introduced in 1919 at a time when only 3 percent of the cigars were made by machine meth-

ods. By 1936 the percentage was up to 50 and today the mechanization is greater. This technology, as in the case of other industries, enables fewer factories to turn out as much or more products.

That's A Lot Of 'Coffin Nails'

In 1919 the National Research Project of the WPA stated that 'machines now in use can turn out about 600 cigarettes a minute, and equipment capable of greater speed is being developed.'

The average output per cigarette factory was 200,000,000 a year in 1919 but it jumped to 1,655,000,000 in 1936, and 95 percent of all the cigarettes produced were made by only eight companies, with four of those getting 85 percent of the business.

When was the all-time peak of tobacco products employment? It will surprise many of the 28 year olds now smoking to learn that this peak was reached before they were born, in the year 1914. It was then that cigar and cigarette factories had a grand total of 180,000 employees. Total employment, total man-hours of labor used and man-hours per unit have all been declining ever since.

Latest Bureau of Labor statistics put the U. S. total in August 1943 at 89,000, while in August 1939 a month before this war started it was 91,000. In 1936 the average cigarette worker was producing 4,900 units per hour.

Now it's much more than that and after the war productivity per man-hour will go higher. Human toil and

hand tools have almost completely disappeared from the picture in the tobacco products industry.

Against Fascism At Home

During the month of August, losses among American industrial workers due to sickness, accidents, and personal reasons amounted to 39,550,000 man-days, according to a report of the National Industrial Conference Board, in a report that did *not* make the front pages where strike news was headlined. This total is more than five times the loss of man-hours resulting from strikes in the first two-thirds of 1943.

'There is a distinction between drafting men to work in Uncle Sam's shipyards and in drafting them to work in Sam Smith's shipyard, even if Smith is building ships for the Navy. The contractors are running their business for profit, and for the government to draft one man to work for another is entering into a field that savors of privilege and involuntary servitude. If, in the course of the war, it becomes necessary to draft workers, then Uncle Sam should expropriate the plant. It must be Uncle Sam's—owned and managed by him—with not a dollar of profit to any individual or corporation.' Josephus Daniels, former Secretary of the Navy, 4/3/43.

'American farmers, as represented in the National Grange, are willing to have their entire industry con-

scripted along with manufacturing, mining, capital, labor, and all other resources of the nation, if such universal conscription is deemed essential to winning the war.' *Christian Science Monitor*, 11/19/42.

'The resolution (passed by the Southern States Federation of Labor) opposed conscription of labor, but stated that if it should become necessary then all industries and places of business . . . wherein such conscripted labor might be assigned work, shall likewise be taken over by the government and operated under supervision of the government, so that "no forced labor shall be used by any private employer for private gain or profit".' *Greater Los Angeles Labor*, 12/15/42.

The danger in forcing the nation's men and women to work for whatever corporations they are told to, at whatever jobs and hours and working conditions they are given, is in leaving those corporations to continue doing practically as they please.

Would *you* want to be ordered by your government—on the requisition of corporate enterprisers—to work for America's *Mitsui's*, *Comite des Forges*, *Krupps*, *I. G. Farbenindustrie*, et al?

Representative Harry Southoff sponsored a resolution in Congress recently, calling for an investigation of profits in the food industry. It was referred to the House Agricultural Committee. He also demanded that the OPA make public a 'confidential' report showing fantastic profiteering by food wholesalers. The secret report purports to show that meat packers' profits have increased 638 percent since 1939 and general food profits about 600 percent. Attempting to justify the report's suppression, an OPA official is reported to have said that the agency was in the business of curbing prices, not profits.

This is exactly 50 percent correct. No Price System agency ever was or ever will be set up to curb profits. The rule is, if you can't get it one way, get it another. The insoluble mystery of it is this: How can you curb prices without curbing profits? Perhaps the Wizard of Oz knows.

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TECHNOCRACY

WHAT?

WHERE?

WHEN?

WHO?

WHAT?

★ Technocracy is the only American social movement with an American program which has become widespread in America. It has no affiliation with any other organization, group or association either in America or elsewhere.

★ The basic unit of Technocracy is the chartered Section consisting of a minimum of 25 members and running up to several hundred.

★ It is not a commercial organization or a political party; it has no financial subsidy or endowment and has no debts. Technocracy is supported entirely by the dues and donations of its own members. The widespread membership activities of Technocracy are performed voluntarily; no royalties, commissions or bonuses are paid, and only a small full-time staff receives subsistence allowances. The annual dues are \$6.00 which are paid by the member to his local Section.

★ Members wear the chromium and vermilion insignia of Technocracy—the Monad, an ancient generic symbol signifying balance.

WHERE?

★ There are units and members of Technocracy in almost every State, and in addition there are members in Alaska, Hawaii, Panama, Puerto Rico and in numerous other places with the Armed Forces.

★ Members of Technocracy are glad to travel many miles to discuss Technocracy's Victory Program with any interested people and Continental Headquarters will be pleased to inform anyone of the location of the nearest Technocracy unit.

WHEN?

★ Technocracy originated in the winter of 1918-1919 when Howard Scott formed a group of scientists, engineers and economists that became known in 1920 as the Technical Alliance—a research organization. In 1930 the group was first known as Technocracy. In 1933 it was incorporated under the laws of the State of New York as a non-profit, non-political, non-sectarian membership organization. In 1934, Howard Scott, Director-in-Chief, made his first Continental lecture tour which laid the foundations of the present nation-wide membership organization. Since 1934 Technocracy has grown steadily without any spectacular spurts, revivals, collapses or rebirths. This is in spite of the fact that the press has generally 'held the lid' on Technocracy, until early in 1942 when it made the tremendous 'discovery' that Technocracy had been reborn suddenly full-fledged with all its members, headquarters, etc., in full swing!

WHO?

★ Technocracy was built in America by Americans. It is composed of American citizens of all walks of life. Technocracy's membership is a composite of all the occupations, economic levels, races and religions which make up this country. Membership is open only to American citizens. Aliens, Asiatics and politicians are not eligible. (By politicians is meant those holding elective political office or active office in any political party.)

★ Doctor, lawyer, storekeeper, farmer, mechanic, teacher, preacher or housewife—as long as you are a patriotic American—you are welcome in Technocracy.

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306 W. Randolph Street,
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Technocracy Sweeps Canada

For the first time in three years and four months Technocracy is active again in Canada. On October 15 the Canadian Government released Technocracy from its temporary suspension and, without a moment's delay, the work of reconstructing the Organization, which had been disbanded since June 1940, began. The Technocrats of Canada had waited long and loyally. When the signal was given by the Canadian Government they were ready. Perhaps, to some of the observers, the phenomenon of Technocracy's vitality appeared as a phoenix arising from the ashes, arising from a sacrificial offering which had been made of Technocracy to gods with clay feet. For here was Technocracy again and three years had failed to dilute the enthusiasm of the Technocrats. Within days there was a network of activities from Nova Scotia to the Queen Charlotte Islands.

The ban on the Canadian activities of Technocracy was instituted by an Order-in-Council on June 20, 1940, at a time when Technocracy was reaching a new peak of organization expansion in Canada. On October 15 this ban was lifted unconditionally by the Canadian Government and the act was personally announced in Parliament by the Right Honorable Mackenzie King, Prime Minister. Technocracy is now restored to 'all property, rights, and interests in Canada.'

Because of the fact that the Organi-

zation had consistently and sedulously observed and obeyed all laws and regulations of Canada and was never charged with any infractions, it is restored to full operations with the approval and respect of the Canadian public. The total membership of Technocracy in Canada was cancelled by Continental Headquarters on June 30, 1940, and it is significant to note that amongst the flood of new membership applications a large number are from those who were never members before!

The Technocrats of United States and their friends salute the integrity and unswerving loyalty of thousands of North Americans residing north of the Great Lakes and the Forty-Ninth Parallel whose fortitude of purpose has carried them through this period of national trial. The Technocrats of United States and their friends salute those valiant thousands who have refused to be discouraged, who have declined to be intimidated, who have maintained the ideology of the world's greatest social objective. To these valiant thousands in their unswerving loyalty to the only social dynamic of this Continent, the Technocrats of United States can only say: Well done, Canadians! This Organization in its entirety moves forward continually and without compromise toward its great Continental social objective for the benefit and security of the population of this Area.

Continental Headquarters

GREAT LAKES TECHNOCRAT

25c

MARCH-APRIL, 1944

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Illustrating the Futility of Price System Methods of Operation; Interpreting the Trend of Events from the Social Aspect of Science; and Presenting the Specifications for Total Victory in America's War Against Fascism.



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I Am the Price System

by The Peripatetic Technocrat

Everybody knows the Price System. We all have dealings with it every day of our lives, from birth to death, and there is no escaping it this side of the River Styx.

It dictates nearly everything we do and controls almost everything we use except the air we breathe. The only reason it can't interfere there is because air is abundant. Here is its autobiography, written by the old miser itself.

Always With You

I HAVE existed since the beginning of social life yet few men recognize my fundamental characteristics. With the exception of some minor civilizations here and there, I am the only type of Social System that has ever existed. I was conceived in Human Toil and Scarcity and dedicated to Profit and Waste.

Before recorded history began I laid down the foundation of my system in the early tribal life of mankind. In the Ancient World they called me Chattel Slavery. The glory of Greece and the power of Rome was rooted firmly in Human Toil and Scarcity. During that long night of the human mind called the Dark Ages I was known as Fuedalism and Serfdom. In the modern world I am called Capitalism and they even entitle me Democracy in certain nations. Of all the names I have borne, the most misleading of all is that

given to me in Russia. There they call me Communism.

My name has been changed many times but essentially I have remained the same in all countries and times, except that my techniques have improved.

I am any social system whatsoever that effects its distribution of goods and services by means of any system or trade or commerce based on commodity valuation and employing any form of debt tokens or money.

For uncounted generations I have held sway in every Nation over the bodies and minds of men. Today I still exist all over the world in various stages of development, controlling the production and exchange of goods and services and all the means whereby men live.

I am the group expression of man's common urge to live and prosper at the expense of his environment, even

including the human components thereof. I am the resulting social system under whose regimentation every man is forced to give as little to society and his fellow man as he can get away with and take back as much as he can get.

I am the law of the jungle (eat or be eaten; kill or be killed), projected by mankind into institutional forms. I am the lowest common denominator of the ability, intelligence and necessities of mankind.

Mood of Confession

Early in social life I discovered that values could be determined by the force of human desire and that desire itself was determined by Scarcity. Value and Scarcity are therefore the cornerstones of my system.

I dressed them up so that men would not recognize them and baptized them Supply and Demand. In this guise they have befuddled men for ages. I had my economists tell them that Supply and Demand were natural laws and dictated Prices. This took the moral blame off my system and created the impression that nothing could be done about it.

Supply and Demand has been a useful myth to my System. Behind its cover I have always restricted the supply and made it a practice never to allow demand a free avenue of expression. Actually, there is no ceiling to supply except ability to pro-

duce and no limit to demand except ability to consume. But I cannot afford to let it become generally known that there are no natural laws except physical laws.

What was the first discovery that savage man made after he came together in social life? It was the elementary one, still valid, that other men placed a premium on scarce articles. This was the beginning of 'Chiselocracy.'

After this original discovery, I found it necessary to have more tools to work with. So I invented a promise and called it I Promise to Pay. This has turned out to be a neat device. I Promise to Pay can be neither seen, tasted, heard, felt or measured. I conjured it out of nothing and planted it in the minds of men. It took root and grew there with lush abundance.

I Promise to Pay was the first of a long list of operating devices I invented to facilitate the functioning of my system. They were all conjured out of nothing, with no basis in physical laws, yet they have become the Rules of the Game under which my System operates.

Next, so that men would not recognize the non-substantial nature of my Promise, I fashioned real tokens to represent it. These I called Money. Since Money is the token of a promise, it is a Debt Token. It has no ultimate reality in itself but only in

what it represents, which has no reality at all. Money is the promise of I Promise to Pay, when, as and if. *It is the Nothing you get for Something before you can get Anything.*

It seemed necessary to camouflage the real nature of Money, so I gave it another name called Medium of Exchange. This has a respectable sound and besides that it is actually how Money functions. It is not, however, a medium of distribution as some of my apologists assert. My system, *The Price System*, is not interested in distribution. It functions solely to exchange goods and services on the basis of scarcity determined values for a profit, and any distribution that results is an unavoidable by-product.

It became apparent at once that Money functioning as Medium of Exchange possessed certain characteristics useful to my system. It is negotiable, transferable, interest-bearing and can be saved. All this allows it to be traded in, stolen, given or gambled away; and since it is not a measure of anything real and fixed, it can be devalued, revalued and manipulated in countless ways.

This variability is necessary to the existence of my system. There must always be a free flow of Medium of Exchange, else the arteries of commerce will dry up. In addition there must also always be an ever present natural or artificially maintained

scarcity, else values will collapse and there will be no basis for exchange.

I Have Much To Confess

The way my System is organized it is compulsory for the individual to accumulate as many Debt Tokens as possible or else become a public charge. There are three major compulsions involved. First, because of the negotiability of Medium of Exchange, it constitutes a debt claim against my entire system, or society at large, as my Debt Merchants say. Second, also because of its negotiability, Money can be exchanged for any goods and services available. Third, again because of its negotiability, it constitutes a potential working force which can be hired out at stipulated rates of increment stated in terms of itself, thus increasing in size and power. When used this way, Medium of Exchange is called Capital. Once an accumulation of Debt Tokens has reached the proportions of Capital, it becomes compulsory to keep it out working all the time. Its tendency is to shrink back into the nothing from which it came. It must either increase or die.

If all the gold at Ft. Knox were dumped in the ocean would production stop? If not what is it based on, mercenary motives or social necessity?

The purpose involved in my entire system is for the individual to acquire as many Debt Tokens as possible and thus acquire a larger lien on I Promise to Pay. One must pile up debt claims against his fellowmen faster than they can pile them up against him. One must be either a horse or a rider, a chiseler or a sucker. It's dog eat dog all the way through.

During my checkered career I have performed such a complexity of manipulations with Medium of Exchange that dozens of schools of economists have arisen around my antics. Each one claims his theory of Money is correct. That is why economics can be correctly defined as the study of the pathology of debt.

Previous to the invention of Medium of Exchange, my activities had been restricted to direct barter and outright theft. I have never really outgrown these time-tested methods of lightening the suckers' burden. I merely graduated into improved techniques. In these more refined, modern days, whenever a situation calls for primitive methods, I always seize the opportunity to keep in practice. There's nothing like having something solid to fall back upon, should a rainy day come.

I Begin To Feel My Oats

The device of Capital allowed me to put into effect Delayed Exchanges. This opened up a whole new world

for expansion. I brought Capital and Delayed Exchanges together in natural wedlock and they begat Debt, Interest, Profits and Waste. These are the four horsemen of the apotheosis of my system.

Debt grew up like Milo, getting bigger all the time. His little brother Interest accompanied him wherever he went and always managed to pick up a little something on the way back. Every so often Profits got lost among Delayed Exchanges but Debt and Interest always went out and brought him back. Waste operated everywhere expediting the turnover of Delayed Exchanges and thus helped to maintain Scarcity.

'Waste not want not' has been translated by business to mean, 'Waste not profit not.' No business ever reaches great success without well planned waste. It's indispensable to the Price System.

Once when Delayed Exchanges seemed to be turning over too slowly, I brought Waste and Profits together in illicit relations. They begat Cheap Substitutes and Shoddy Goods. Delayed Exchanges turned over much faster after that; and Scarcity became more pronounced.

But, alas! Debt turned out to be allergic to a natural enemy called Paid in Full. Every once in a while this pest turned up and I was forced to create New Debt. After some ex-

perimentation, I devised an improved type of Debt called Long Term Debt. He resisted Paid in Full much better.

So with Scarcity, Values, I Promise To Pay, Medium of Exchange, Capital, Delayed Exchanges, Interest, Long Term Debt, Profits and Waste, I was almost all set for a successful and endless career.

Jungle Law Comes To The Jungle

There remained two things to do. I had to have an institutionalized social structure, superimposed upon these operating characteristics so as to consolidate my gains and maintain law and order. Also it was necessary to camouflage it so that men would take it for everything else but what it actually is. How successful this effort has been only a thermodynamic interpretation of history will reveal. Radicals, liberals, moralists and humanitarians have tinkered with my superimposed social structure for ages without altering or affecting its basic operating characteristics one bit.

To tell the truth, I did not design these social institutions as one job. They grew up naturally over a period of time as a normal outgrowth and corollary of the basic system of trade and commerce underneath.

In the very beginning of social life men had come together in groups for the purpose of multiplying their strength against the opposing forces of their environment and thus obtain-

ing individual security more effectively. This is the original reason for the formation of tribes and communities of people. One might put it this way: The paramount concern of the social state is supposed to be the general welfare of the human components involved.

There are two kinds of laws in society, physical laws and legislative laws. Physical laws can't be violated, they operate willy nilly. Legislative laws are passed because it is known in advance that they are being, or will be, violated. U. S. Supreme Court Justice Benjamin Cardozo once said: 'The purpose of the law is to preserve the ancestral smell.'

How I subverted social life from its paramount purpose is a story in itself. It runs concurrently with the gradual development of my operating tools for production and exchange of goods and services. For the superimposed social institutions are but a reflection of the fundamental means whereby men live.

Briefly, those who learned how to chisel according to the opportunities provided within the framework of my system became a ruling oligarchy. All men, of course, could not do so but only a minority. For, where there are exploiters, there must be some one and something for them to ex-

plot. In any event, while Natural Scarcity prevailed, which was the case for many thousands of years and is still so in most of the world, there never was enough to go around and provide every one with what he needed. So, if that part of the physical wealth which went to the ruling oligarchs had been divided among the great mass of people, it wouldn't have made much difference.

All throughout history my system has been operated and controlled by three oligarchies. First, came the oligarchy of organized Government to maintain my law and order. Next came the oligarchy of the priesthood and medicine men who preached submission to my system and reward after death. Last came the oligarchy of the entrepreneurs who operated my system of trade and commerce. These three have alternately either controlled separately or worked together in all countries. I have named them Ecclesiasticism, Private Enterprise and the Political State.

Their role today is the same that it has always been. Organized government is necessary under any social system. Since the first concern of any government is to maintain itself, mine is no different from what any other form of government would be in that respect. It protects its own, i.e., the *Price System* of production and exchange.

Private Enterprise functions to ex-

plot the natural resources of the land and the human components thereof for all the profit the traffic will bear. It is easy to see how the interests of my three oligarchies tie in together.

'I often say that if you can measure that of which you can speak, you know something of your subject; but if you cannot measure it, your knowledge is meager and unsatisfactory.'—Lord Kelvin.

Such Stuff As Dreams Are Made Of

The last factor which adds to the strength of my system and its resistance to change is the set of sugar-coated Abstract Concepts that has been woven into it by my philosophers and historians. I conjured these empty ideas out of nothing. The proclivity of men to become enamored of visionary conceptions is truly amazing.

Abstract concepts are composed of symbols in the minds of men which are *not* reflections of real things in the physical world about him. For example, the mental symbol 'horse' represents something real in the physical world, that is, 1500 pounds of flesh and bones on the hoof. Thus, it is a Real Concept. To prove it, you can perform an operation to demonstrate its reality. You can describe a horse with words, i.e., other symbols, and then go out in the

physical world, find a horse and show where your verbal description fits the real thing.

If every single real thing in the physical world had its symbol in the minds of men, there would be an even number of symbols and things and no more. All mental symbols would be Real Concepts. Such is not the case, however; the minds of men in addition to being able to contain Real Concepts can also entertain an apparently limitless number of empty symbols which represent nothing in the physical world.

This fact is one of the main props of my system. Over a period of time my philosophers, and more lately that frustrated breed of psychotic complexes called the Liberal, have invented thousands of Abstract Concepts to intrigue the minds of men. Among these are Liberty, Freedom, Equality, Fraternity, Justice, Natural Rights and Survival of The Fittest, Right, Wrong, Morals, Ethics, Sin and so on. Try to perform an operation to prove the existence of any of these concepts in the physical world of reality and see how far you get.

I am not afraid of these Abstract Concepts because, not being physical entities, they can be and are clothed in ever shifting definitions and can never be united on any common basis of agreement. They can never harm my system and they're very useful. The intensity of their hold upon the

minds of men is so great, however, that they will face blazing machine guns in defense of them even though they don't exist. Whether men will go as far in the furtherance of Real Concepts remains to be seen.

Abstract Concepts help to conceal the real nature of my system. They keep men busy ever seeking to attain that which is unattainable. If you will analyze my system closely, you will see that in its physical operations to produce goods and services, it conforms to some physical laws. But in its exchange of this physical wealth, it ignores physical laws and the control is carried on by methods devised out of Abstract Concepts, or nothing. No wonder it jams up-every so often.

Exchange value is a function of scarcity. When scarcity departs the concept of exchange value collapses, revealing its abstract nature. Therefore under a Price System we are actually rich in inverse proportion to what we don't have, in goods and services.

As long as Scarcity lasts, my system can operate. But when Abundance enters the picture, Scarcity and Values both disappear and all the Abstract Concepts of my system will shrink back into the nothing from whence they came. When this occurs, Real Concepts will enter the picture and then men will discover for the first time what I have known all

along. That is, that the benefits they have been seeking for ages in Abstract Concepts never did reside there at all but always were waiting to be found in Real Concepts derived directly from the physical world around them.

Abundance Haunts Me

Of all the Real Concepts there are, the one called Abundance for Everyone makes me shiver every time I hear it. Those words contain my death warrant. As I look back now, I can see that my troubles began in 1782 A.D. when the first double-acting steam engine was developed. Oh! If I had only known then what I know now. I would have been absolutely ruthless in the eradication of Science and all thoughts concerning Science.

For I was just then enjoying the tail end of a thousand year moratorium on change. My triple oligarchy, Ecclesiasticism, Private Enterprise and the Political State had installed and maintained this glorious period in my name. Historians call it the Dark Ages, but to me it was the Golden Age of the Price System. There were no upsetting thoughts about Abundance For Everyone then. Men were content to work away from sun to sun for the greater glory and profit of their masters, assured of suitable rewards hereafter. The few heretics who dissented from my sys-

Who discovered the use of fire, and how; who discovered the principle of the wheel; who first smelted iron ore? Thousands of contributions to the advance of scientific knowledge were made by countless known and unknown men. Ask yourself, who owns science?

tem were quickly taken care of in medieval torture chambers and at the stake. Long success had made me lax and I had forgotten that underneath the superimposed social structure, hoary with folklore and ancient traditions, Scientific Knowledge was increasing.

In the Ancient World, Scientific Knowledge had gotten off to a respectable start in Greece and at Alexandria. But the legions of Rome and the fanatical followers of Mohammed soon had the situation well in hand. Then I froze the status quo for a thousand years. It seemed good enough to last forever. Men, however, were discovering physical laws and learning how to apply them. Apparently even my *Price System* can't stop men from thinking and experimenting.

I Am Outflanked

By the time the 18th Century rolled around, this growing body of knowledge had spawned the witches' brew of Science, the Scientific Method and

the Scientific Attitude. Inventions were made and existing knowledge of physical laws applied therein. Machinery came into being, crude and cumbersome, but more efficient than my age-old methods of Human Toil and Hand Tools had been. Some unknown enemy of mine discovered that any motion that is repetitive can be performed better by machinery than by human hands. Then the factory system of production was born and my arch enemy Technology entered the picture.

Coincident with these developments came a greatly increased use of power derived from sources outside the human body such as coal, oil, gas, wind and falling water to turn the factory wheels. Without this latter development, Technology would not have attained its present estate. Though, of course, Technology and Extraneous Energy are more or less the same thing, like identical twins. The conversion of Extraneous Energy to use it for power was new and revolutionary.

All throughout my long history, the only source of power available had been the human body supplemented by crude windmills and the power of work animals. So, the only way to produce more was to employ more men or work longer hours. The average power of a human body is one-tenth that of an average horse. In 1782 the first double-acting steam

engine developed many times the power of one horse. So the industrial revolution began and I, poor fool, welcomed all this.

When George Washington drove the 250 miles from Mt. Vernon to New York City for his inauguration the journey required seven days. Today one can reach any place on earth in less than three days. Horse power ideas, too, be-long in the horse-power age.

Had I foreseen the ultimate results of the impact of Technology and Energy upon my *Price System*, I would have put a stop to it in its early stages. Now it's too late. Science has grown to gargantuan proportions and men have become dependent upon the machines they have created. The best I can hope for now is to revert to some intermediate stage of development and freeze my system there. In fact, I have been staging a powerful attempt in that direction lately in Europe and Asia. I call it Fascism. It's my only hope.

There is no one to blame for my present predicament except myself. I have been a partner to my own downfall. Of all the heretics, liberals and radicals spawned by every protest movement in history, none have given me such cause to worry as my own stupidity. The operating devices which worked so well for so long don't seem to work so well these days.

This has been more true in North America than in the rest of the world. Here, Technology and Energy have advanced further than anywhere else.

'When I use a word,' Humpty Dumpty said, 'it means just what I choose it to mean — neither more nor less.'—Lewis Carroll.

I Go On A Long Spree

In the beginning of the Industrial Revolution, I enjoyed expansion, such as had never happened to my system before. I spread into the furthest corners of the earth. I modernized my operating characteristics and added refinements unknown in the simpler Agrarian-Handicraft stages of the past. Any Debt Merchant or Economist can reel off the list for you. They study the pathology of my operating devices (which you will remember were conjured out of nothing) without ever inquiring into their essential nature. That is because these gentry are well chosen for lack of perspicacity. But at least they are familiar with the new nomenclature.

When expansion began I saw at once that Private Enterprise needed a few more Abstract Concepts to assist it. So I conjured up the following: Live and Let Live, Competition Is The Life of Trade, Individual Initiative, Plan of Plenty, Rugged Individualism, Niggardliness of Nature, Law of Diminishing Returns, Business Responsibility and Free Enterprise.

They sound beautiful and have functioned well, but I can assure you they are as hollow as a puff ball.

When the Political State saw Private Enterprise expanding into Corporate Enterprise, it too had to modernize. So I added a set of Abstract Concepts to it also, such as: Political Democracy, The Voice of the People is the Voice of God, Government of Laws and Not of Men, Equality Before the Law, Freedom of the Press, Freedom from Want, Freedom from Fear, and so on. Any politician can reel off the list for you. They're always spouting about these Abstract Concepts.

If you study history closely, you will find that these latter day Abstract Concepts came in with the Industrial Revolution. They are now part and parcel of my operating characteristics. If you will examine them carefully you will see that they cannot be worn as clothes to keep out the cold nor eaten for food to nourish the body. They are in all respects negotiable the same as Money, and can be and are bought, sold and traded in on the open market.

Malthusianism Outwitted

One of the first effects of the Industrial Revolution was an upsurge in population. It was possible with the new power and Technology to produce more commodities. Thus, it was possible for a larger number of men to live. This trend has continued. For the first hundred years or so of the new order, it didn't matter. Industry was expanding and the birth rate of new jobs was always

greater than the death rate of old jobs, eliminated by the advance of Technology. If I succeed in reverting to a lower stage of industrial development and freeze social change, it means that the population will also have to be decreased to the number that can be supported by a less advanced stage of production.

In one country, Russia, composing one-sixth of the world's land area, two members of my triple oligarchy were kicked unceremoniously out of the picture by a political revolution in 1917 A.D. These were Private Enterprise and Ecclesiasticism. However, the Political State took over their functions and I still operate the same old way there. My stage of development there can be defined as State Capitalism. It functions the same except that Private Enterprise has become State Enterprise and Ecclesiasticism has been emasculated to a great extent. However, the Technology of Russia is growing rapidly and I fear the worst.

Fascism is a network of compulsions in economics, government and religion, designed to freeze social change and maintain the ancient status woe. It is the consolidation of all minor rackets into one major monopoly for the benefit of wealth and privilege.

Most of the world is still in the first or second stages of the Industrial Revolution, and it shouldn't be too hard to retard social change there. These backward nations do not possess enough natural resources to de-

velop much further. I, the *Price System*, can still operate according to the old formula there. Perhaps a federation of some nations based upon the location of natural resources could arise. That would make conditions uncomfortable for me. The Political State in every country, however, is prepared with a powerful Abstract Concept called Nationalism to oppose any change. The juju of my Abstract Concepts is potent, even if they themselves are not real.

Look Down That Lonesome Road

As I survey the world today, I find one Continent where I am in extreme danger of liquidating myself in the very near future. I am not one to cast blame for my failures upon others. No political ideologies or economic utopian nostrums can alter the basic operating characteristics of my system one bit. Their proponents make good scapegoats but my real enemy is the fact I, the *Price System*, cannot adjust myself today in America to the impact of Technology and Energy.

In the past when things got tough for me in any country, I could always start a war and channelize social change into homicidal conflict. In the past 3500 years, I have had one or more countries at war for all but 330 years of that time. Corporate Enterprise, particularly benefits greatly in time of war. Prices rise, business booms and profits mount higher. The Political State too has an opportunity to expand its powers and prerogatives. Ecclesiasticism, of course, func-

tions on both sides in every war. As a general rule, the same can be said for Corporate Enterprise in these days of International Bankers, Cartel Agreements and World Commerce. Technology, however, has made war too expensive for me. Not that I mind the killing, but the financial problems are a headache. Worst of all, modern wars are waged with the tools of Technology and (woe is me) the tools of Technology are the tools of social change.

In America, today, the more Technology and Energy that is introduced, the more insoluble my problem becomes. It seems that they function everywhere to defeat my purpose to maintain Scarcity and Values. They increase Profits but make it ever more and more difficult to reinvest Profits. They raise the Debt too high and lower the Interest Rate too low. They increase production and decrease employment. They cut down Purchasing Power and raise up a whole host of new social problems that never existed before. They flood the land with Goods and Services, but dry up the free flow of Medium of Exchange. They close the door on Scarcity, but open it for Abundance For Everyone, thus seriously threatening to destroy Values.

The efforts of the Price System to stop the impact of technology are as futile as the labors of Sisyphus. The only solutions are to stop technology; or realign the social structure in conformity with physical laws.

All this, in spite of my best efforts at Monopoly Control, Restricted Production, High Prices, Shoddy Goods, Buried Patents, Cartel Agreements and Financial and Political Interference. Moreover, the struggle for survival of Private Enterprise makes compulsory the installation of ever more Technology and/or Extraneous Energy.

If A Balloon Goes Up Too High

No matter which way I turn, in America, there is an impasse. The task of creating new Debt in the face of its rapid liquidation and the expense of new Technology becomes ever more and more unbearable. About 1932 Corporate Enterprise gave up the struggle to create New Debt and passed that responsibility over to the Political State. This Lieutenant of mine, as strong as he is now, barely staggers along under the growing load. Perhaps I can solve that one particular problem at least. Debt, if you remember, is created out of nothing. It can also be dissolved back into nothing. I pulled that stunt once before in Germany. It's called Inflation.

Political State increases the amount of Money in circulation until it becomes dirt cheap. When the total amount of Money becomes many times greater than the total Debt, the relative position of Debt is reversed compared to what it was before. It is then small in comparison to Money. So the Debtor takes this Legal Money to his Creditor and pays off his Legal Debts at a fraction of their former

worth. It's a legal swindle, but so what? How about I Promise to Pay, you ask? Well, I told you, it was conjured out of nothing, didn't I? Under Inflation, Private Enterprise performs hari-kiri, for the good of all and then I start all over again with a brand new Private Enterprise.

Science is a fair palace of lofty dimensions. It stands properly ordered and rock solid, upon the enduring base of its postulates. Criticisms originating outside its postulates are categorically absurd.

That won't solve my entire problem in America though. This Continent possesses 78 percent of the world's installed horsepower of machinery, 73 percent of the world's graduate engineers (those damnable brats of Science who are forever designing new Technology), 19 percent of the World's land area, the largest body of technicians and skilled personnel on earth, the lion's share of the World's natural resources and only 10 percent of the World's population. All this adds up to trouble for my System, the *Price System*, of production and Exchange of commodities.

The installation of ever more and efficient Technology in America, which has been accelerated by World War No. 2, makes Scarcity ever harder to maintain and tends to dry up the free flow of Medium of Exchange. If you remember, these are the cornerstones of my system. As more and more efficient Technological Mechanisms are introduced, man-

hours per unit of Production are constantly driven lower. This spells disemployment of labor and decline of total Purchasing Power. The less Purchasing Power, the less Production. The less Production the less Purchasing Power.

I Have To Expand Or Contract

So it becomes necessary to create ever more New Debt to pay for the installation of still more efficient mechanisms to cut the costs of Production and grab a share of the dwindling market. The new mechanisms, however, pay off the Debt so fast that I'm left holding the bag every time. Reinvestment in new industry becomes ever more necessary and ever more difficult.

The birth rate of new jobs created by Technology has long since dropped below the death rate of old jobs destroyed by the same cause. From 1860 to 1914 in America, my Debt expanded at a compound Interest Rate of 5 percent annually. But physical Production expanded at a compound interest rate of 6 percent annually. The Debt was always healthy. Since 1914 the reverse has been the case. Physical Production has risen to a peak and leveled off but Debt is going straight into the high heavens. Since 1932 when Private Enterprise dumped its Debt-creating prerogative onto Political State, the curve of industrial Production has been following the curve of Government spending like a hound dog follows a coon.

As I said, it's not a problem of finances; it's a problem of how to

maintain physical Production at a high level so as to maintain Purchasing Power and thus maintain the free flow of Medium of Exchange. If I allow physical Production to be maintained at a high level, I destroy Scarcity and if I don't, I dry up the flow of Medium of Exchange. Oh, riddle of riddles! How can it be done? If I inflate the Money, I may destroy all of the little remaining confidence in me and thus seal my own death warrant. I got away with it in Germany only because that country was less advanced industrially and could recover rapidly and resume expanding under my methods.

When the first savage reached for a stick to scratch his back with, technology was born. It has been a long time coming of age. But now it's here, and we can either make room for tomorrow or pay the penalty. This generation of Americans has a rendezvous with destiny.

In America, the problem of Production is solved. The Technology is installed and can do the job of distribution of Abundance For Everyone whenever my interference controls are removed. My problem is to stall this off as long as possible; and to devise ways and means to freeze social change on a low level. I don't care if it does involve killing off 50 to 75 percent of the population of America. What is that compared to my beloved Oligarchies, Private Enterprise, and the Political State!

The End Justifies The Means

Since I was conceived in Scarcity and dedicated to Waste I am utterly without scruples. I know very well that the prosperity I am enjoying now while America is engaged in the most fateful war of her history is only transitory. I know that it has been bought at the terrific risk of installing a greatly expanded Technology. I know that when the war is over I will be faced with problems such as I never had to contend with before.

I know that scientists and engineers have been analyzing my operating characteristics and have pointed out every flaw. I know too that a more efficient social system has been designed which will distribute Abundance and Security To Everyone. But even though I know the handwriting is on the wall I have not lost hope. My collapse, and the victory of Technology, is *not* inevitable.

If I cannot rule I can always ruin. If I go down I may be able to arrange things so as to carry all civilization in America with me. But even if Chaos results I will not disappear. Out of that Chaos I will then arise again like Phoenix from its own ashes. For I have been with you a long time and I have learned many tricks. History records the disappearance of eight different civilizations of the past. The causes are obscured in the mists of antiquity. But history has never yet written the record of one single collapse of my system of trade and commerce, The *Price System*.

There is only one thing that can liquidate me permanently. That is the replacement of my *Price System* methods of control devised out of visionary conceptions by Technological methods of control devised out of the reality of physical laws. But it has never been done before and due to the nature of Technology it must be accomplished peacefully. How difficult this is going to be a glance at my record will reveal. I loathe Peace. As I look into the immediate futuré I can gather strength from the realization that I am not alone. I have many able allies who work unceasingly in my interests. Some of them have been with me a long time.

Social change in the past could only be accomplished with violence. Social change in the Power Age can only be accomplished in peace. The Achilles heel of technology is social violence.

History Speaks Highly of Me

I am the Neolithic man who bartered pretty sea shells and rare stones for food and drink and a place by the fire. I am the tribal medicine man who charged a fee for exorcizing the devils. I am the slaves of Egypt who built the pyramids; and the Pharaohs who were buried there many centuries before my system expanded into Europe. I am the oligarchy of Athens who poisoned Socrates. I am Judas who betrayed Christ; and the Phari-

sees who crucified him. I am the legions of Rome who conquered Greece; and the fanatics of Mohammed who burned the library at Alexandria. I am the Inquisition that persecuted Galileo; and burned Bruno at the stake. I am the radicals of Paris who beheaded Lavoisier: 'The revolution has no need of chemists.' How true from my point of view. I am the mob that shot Elijah Lovejoy; and the Political State that hanged John Brown. I am the brass hats who framed and convicted Billy Mitchell. I am the Capital Investment of the aviation industry which is holding back the adoption of the Flying Wing type of super-bomber in this hour of America's need.

My Upholders Are Legion

I am the esthetes who revel in the delicacies of life that are beyond the reach of the great majority. I am the privileged few who are free to enjoy the fresh air and sunshine, the green meadows, streams and mountains of America. I am all the pot-bellied beneficiaries of my system, whether in broadcloth or overalls. I am also the stolid, patient, underfed worker; and the fat dowager who eats too much and talks too much. I am the miseducated, smart fool who knows all the wrong answers. I am the white collar snobs, the vice-Presidents and Honorable stooges who snub those in more plebian walks of life; and the peasant psychology of the underdog who looks up to Society instead of around at it. I am the myriad of non-producing personnel in all industries

who thrive on the institutionalized red tape of my system.

I am the grand mansions on the Avenue where they will try anything once; and I am the bleak, filthy slums where minds and bodies are dulled by incessant poverty. I am the Park Avenue playboy; and the procurer who hangs around taverns. Their methods differ in degree but not in kind. I am the mink coats of the night clubs. 'You can smell them as they go by.' I am all the 'Nice' kind Christian people of America. How they love to be discreetly dishabille, but not enceinte; and how their hearts can bleed for the poverty stricken children of India, China and all other points 12,000 miles away. I have been spawning them for four generations and today they are 'Nicer' than ever. I am the Banker (Debt Merchant) who never knew anything about his own commodity except how to take a dollar and lend it out at 6 percent interest.

I am the housewife in a constant dither to keep up with the Jones'. I am that monstrous anachronism the father and mother who enslave their beloved children to their own narrow horizons in the 'sacred' name of parenthood. I am the church bells ringing on Sunday morning; and the smug ecclesiastic who rationalizes fear of the unknown into reward after death. My voice is heard plainly in schools and colleges throughout the land; and I am the school teacher who 'cannot lead a normal life unless he, or she, goes to another town under an assumed name.' I am the professors of Liberal Arts and The Hu-

manities; the smooth sophistries of the philosophers; the crackpot dreams of the Utopians; and the poisonous acid of class warfare.

'Behind all these men you have to do with, behind officers and government, and people even, there is the Country Herself, your Country, and . . . you belong to Her as you belong to your own mother. Stand by Her, boy, as you would stand by your mother.'

—Edward Everett Hale in The Man Without a Country.

Divide and Conquer

I am the shivering newsboy on the corner peddling his daily trash; the writer who composes it; the editor who polishes it up; the publisher who puts it out; the advertiser who pays for it and censors it; and the dumb sap who believes what he reads in the papers. I am the hard-headed tycoon of industry who imagines his club of economic insecurity is executive ability; and I am the Caspar Milquetoast who is afraid to think out loud. I am the law at the end of the policeman's nightstick; the politician who tells him how far he can go in enforcing the law; I am the hired gunman and thug; and the stool-pigeon who puts the finger on my scapegoats. I am also the clever lawyer who inveigles Justice over to the side with the most Money.

I am all the minority pressure groups seeking preferential advantages at the expense of other minority groups; and I am the peoples' representative who caters to these groups. I am the cash-register concept of social values of the smart business man; and the class hatred of the ideologists of dialectic materialism. I am the engineer and scientist who is more interested in personal gain than in social results. I am all the commercial escapisms of modern society, from the moronic movies to the equally moronic but \$30,000,000 a year comic strip industry. I am the millions of adults and children in this country who cannot even read and write. I am the incalculable inertia of the great mass who never do anything about anything unless they are driven to it.

I am the social system and in-

stitutions designed to fit the Agrarian-Handicraft cultures of other lands, imported from across the ocean and superimposed upon the Great Technology of America. I am the folklore and hoary traditions of 7000 years of human toil, hand tools and Scarcity. I am the 'common sense' of the ignorant crowd; and all the superstitions of the unknown. I am every chiseler looking for a sucker; and every sucker who would like to be a chiseler. I am everyman everywhere with a hamburger sandwich psychology of living standards, in the richest Continent on earth. I am all those who know better but do nothing about it.

I am *YOU* who are reading this article. What have you ever done that conflicts with my interests? With such able allies it will not be easy for Technology to effect my collapse.

'I AM THE PRICE SYSTEM.'

Pro Bono Publico

'Fundamental adjustments in the economic order are necessary and we must move from the competitive struggle to co-operative enterprise—' Bishop G. Bromley Oxnam resident Methodist bishop of the Boston area at the Illinois Federation of Women's Clubs meeting in the Sherman Hotel, Chicago on May 26, 1943.

According to the account which appeared in the *Chicago Times* of that date the Bishop also stated as follows: 'In the economic system of the future, a man's standing in the community must be based upon the

service he has rendered and not upon the possessions he has acquired.'

'Then only will the economic and social organism be soundly established and attain its end, when it secures for all and each those goods which the wealth and resources of nature, technical achievement and social organization of economic affairs can give.'

—Pope Pius XI's World Letter on Economic Order.

Sharp and Flats

by Robert M. Yoder

Reprinted by permission of *The Chicago Daily News*
Friday, July 30, 1943.

I SUPPOSE that it goes without saying that the great tool of modern times, the symbol and source of what we are and will become, is the factory. That is why I tell in some detail about a factory I saw the other day—one of the new super-colossal plants, built to produce for war. As I say, it is new, and, therefore, the designers could incorporate everything they know about building factories, as of 1943. And while the plant is all but finished, it was only partially operating, which affords an exceptionally good view.

The most impressive thing, I found, are not those usually emphasized. This plant, a division of the Chrysler Corp., includes one building that covers nearly 80 acres, and is the largest single factory building in the world. That, it was interesting to discover, is singularly unimpressive. What is more impressive is the fact that this huge room, with row on row of beautiful sleek machine tools, could just as well be twice as big. They stopped at 80 acres only because they wanted to stop there. Using the same kind of long shed-like sections, they could have run the thing right over into Indiana.

This will be a factory, apparently, where almost all the work is skilled work, but when you see the machinery standing idle, the impressive thing is the amount of skill or talent

that is assembled there before the workmen arrive—the mechanical talent. Here is a tool that feels a part with metal fingers, and carves another exactly like it. How long, and how clumsily, would a man work to acquire the skill that machine is born with?

Here is another into which they thrust bars of red hot steel. The machine's jaws chomp once, twice, three times, and they have moulded the hot steel into part of an airplane motor. Obviously, it shortcuts many hours of carving and grinding. A couple of men equipped with cookie-cutter-like little gadgets are the equal of giants.

You roll through the 80 acres of machine tools and assembly lines on a little bus, moving fairly fast because there is nothing unusual to see. That is what is impressive, if I can make myself clear—the fact that all this is nothing unusual. Here they stand, the machine tools, as commonplace as corn in a field, as repetitious, as boring. But what as assembly of robots this is! Able, talented, clever, with all the electricity in the Grand Coulee for muscle, and overhead carriers to tote and lift what men can't. Like this observer, you may not have the slightest idea what they do, what operations they perform, which are novel, which are ordinary. That

makes little difference. The imposing fact is that they can be built to do almost any task there is, and once built, may be assembled in any strength you like.

They laid enough concrete here to make a road 90 miles long. They strung 500 miles of telephone wire. They use as much water as the city of Troy, N. Y. And echo answers: "So what?" The really significant point is, there was no limit to the number of units they could have put

together here, there is nothing to prevent assembling twice this many machines, and there is nothing to prevent building a hundred factories like this, and there is nothing those factories—like this trim, efficient machine for producing airplane motors—can't make.

How we are to avoid an era of plenty, with tools like this, is hard to see. It'll take some doing. It'll take real stupidity, it will take obstructionism of a truly superior grade.

Only One Step Farther

'It may be doubted if men and women ever made such an unholy mess of things as we did from 1919 to 1939.

We have so developed our mechanical techniques that there is no predictable limit to the number and variety of things we can do. Five centuries ago, even a hundred years ago, the possibilities presented by the ingredients of this planet—iron, wood, vegetables, carbon, oil, the motion of water—were severely restricted by the poverty of the methods that had been developed to make use of them. Today, these possibilities are literally boundless.

As inventors, as engineers, as scientists, as artists of ingenuity, and even genius in the performance of miracles with a particle of dust or a drop of liquid, we are magnificent creatures; as politicians we are more apt to act like a pack of nitwits.

If we win this war and organize . . . for peace, certainly we will not thereby pop ourselves into paradise on

earth, but we will have made entirely practical a fulfillment of human desire which could never have been anything more than a far-off dream.

In this . . . there are formidable obstacles. The petty men, the greedy men, the blind men, will be the enemies of progress as they have always been; but to defeat them, and to make for ourselves and our children a . . . world in which to live and work and play, we do not need to be demigods or supermen. We need first, the will, and second, *about one-fifth of the intelligence in dealing with our fellow men that we display in dealing with coal and steel and casein.*—Excerpts from an article by Rex Stout, author and head of War Writers' Board, in *Steel Horizons* magazine, as reported in Nov. 1, 1943 *Steel*.

More than 54,000 communities in the United States are not served by railroads.—*Automotive Industry Outlook*.

United We Stand For Export Only

Reprinted from a Technocracy Broadcast Over KPAS, Los Angeles

by N. Jerome Bowen 11834-3

'Money is the Nothing you get for Something, before you can get Anything' — Frederick Soddy. Yes, but why let it interfere with America's war effort?

WHILE the armies, navies, and air forces of America engage our fascist enemies in many far-off corners of the world, a many sided battle is being waged here at home against another common enemy. It will last and we, the people of these United States, will continue to lose until we realize that we can only win by establishing scientific, all-embracing controls over all phases of our war economy.

If you think that the threat we speak of is not real and that the battle is not hot, if you do *not* think that we are so far *losing* it, check up on what you pay now for *clothes*, as compared with what you paid two years ago; check on the level of the *food* in your market basket that your dollar buys as compared with what it did two years ago or even six months ago. In the same way compare the cost of anything you buy and finally check up on the total cost of all you buy in relation to your income. For we are speaking of the national struggle against the rising

cost of living, a struggle that seems more hopeless every month because we fight it with such flimsy, inadequate weapons and which we could end overnight by the only means that will ever end it in our favor; that is, by removing, at least temporarily, our present methods of production and distribution which give weight and power to the growing inflationary trend.

Although its beginning was the result of the overseas fireworks, this battle at home began before *our* part of the shooting abroad started. More than a year ago wages and prices had gone so far in their see-saw ascent that the President announced his plans for a major counterattack to be initiated simultaneously on seven fronts. The first four contingents were directed at prices. Price ceilings were to be established on nearly everything from shoe strings to 10-ton tractors. Rationing of most primary foods, later of some articles of clothing, was to be made effective. Wages were to be stabilized, and farm prices adjusted. The *other* three measures were aimed to make *loose money tight*, to hold it in one place so it would not bid up the prices of the shrinking supplies of consumers' goods. To do this the campaign was planned to control consumers' credit, that is, to discourage installment

buying and encourage the paying off of debts; also to pile up national tax levies and push down the profits for all hands.

The barrage was opened by Leon Henderson's General Price Order of 1942, freezing most prices across these United States. The War Labor Board acted on wage stabilization. OPA spread what they intended to be permanent, immovable price ceilings far and wide on many farm products. Then rationing was installed and extended. Here was a program that to its proponents seemed to insure results. To them it seemed infallible and sure-fire. But the forces of inflation instead of receding have advanced and are still advancing. Many of the price ceilings have already sheared their bolts and headed for the stratosphere. Various labor groups have been fighting for and have received wage increases to match the rising cost of living, and from this cause alone more ceilings have grown wings.

The reasons for the failure of this seven front attack on one of America's major home front enemies are many. Here are a few of them. The OPA has been trying to keep the bolts tight on its many price ceilings with less than 4000 field operatives. There are 1,770,335 distribution outlets in these United States. There is now only one OPA inspector for every 443 of these establishments. Plainly his calls on any one of them will be rather infrequent. Not long ago our OPA put out its pitiful plea that it had no hope of controlling prices without the voluntary coopera-

tion of the American people. Technocracy points out that we never have accomplished and never will accomplish price control by the voluntary assistance of the American people. Voluntary methods are no more successful in fighting the difficulties at home than they would have been if applied to the mobilization of our Armed Forces to fight abroad.

One reason for the non-support of price regulations by the general public is this: As long as we persist in clinging to the peace time practices of business operations, profit taking is the major incentive for increasing production. Where profits in any industry are limited by a price ceiling, that particular industry will not greatly exert itself to increase its production.

No Representation Without Pressure Groups.

Furthermore price ceilings are threatened and attacked by the highly organized farm bloc. The farm population is about 22 percent of the total in these United States. Although they furnish us nearly all of our food and also enormous quantities to be shipped abroad to our Armed Forces and to our Allies, they collect approximately only 10 percent of the national income. Naturally they fight stabilization of farm product prices. On the other hand, every gain the farmers make in their battle is the signal for organized labor to launch a fresh attack on the wage stabilization legislation. When the cost of living rises with the rise in the prices of food,

labor demands increased wages to match it.

The check on installment buying is opposed by the merchants whose mouths water at the sight of so much money for down payments on automobiles, radios, pianos, washing machines and similar high priced commodities, burning the pockets of those who are getting the high wages of the aircraft and other war time industries.

The government's plea that everyone should save more and buy less strikes no answering chord in the breast of the average war industry worker. Many of them never before had incomes sufficient for more than the bare necessities of life. Now that they at last have sufficient for a few of the luxuries they do not relish being barred from buying them.

Brokers and money lenders look askance at or openly oppose the policy of paying off debts. They make their living by the loaning of money. Their occupations would be gone if all debts were paid. Each of these groups fights its own private battle. Each wants a victory for its side, disregarding America's major national objective of winning this war as soon as possible and with the least loss of national wealth and American lives. The sum of these groups is the home front civilian population of America today.

Coming to the subject of more and heavier taxes as a check on inflation we find the toughest, hottest situation of all—Death and *Taxes* are two threats that everybody fights, but while death cannot be fought off in-

definitely by anyone, the question of *who shall pay how much taxes* has been a much-gnawed bone of contention as long as *money* has functioned in any social order. So today everyone continues *this* fight and Congress is *still* kicking around the various proposals to raise the extra billions and *no one plan* to raise this sum has *yet* been finally approved.

Now just lately the coal crisis and the miners' strike and their demands for higher wages to match higher food prices has stimulated the administration to a *final* effort to counteract the rising tide of inflation. The administration is now rolling back food retail prices on some commodities, subsidizing the farmer and in some cases the food processors, thereby releasing the most magnificent display of verbal fireworks that our congressional halls have seen for some time. It seems probable that even if these measures were loaded with any effective ammunition whatever, no complete agreement will be reached on them for months.

He Who Steals My Purse Steal Trash—

We have brought down to date a brief review of our national struggle to hold down prices and wages to keep the cost of living down. You will recall that we prefaced that resumé by stating that we cannot win in the battle against inflation until we establish all-embracing scientific controls over all phases of our war economy. The first step must be the removal for

the duration of all those financial controls now operating in production and distribution.

If you have a large tree near your home which shuts out light and air and which may in a heavy storm blow down and wreck your home, you do not waste time and effort lopping off branches here and there. You take it out by the roots. And the difficulties we encounter in attempting to combat this rapidly growing inflationary trend *have their roots* in the business and financial structure within which we operate our national economy.

Technocracy's program of Total Conscription, to be effective for the duration and for six months thereafter, proposes freezing the entire financial structure of the nation for the duration and thus eliminating for the same period all the operations of private and corporate business. Government would take title to all farms and other products at their sources and distribute all products as needed. Food, clothing and all necessities of life would be rationed but not priced. The only money in circulation would be that disbursed by the government in salaries and wages and all civilians would be rated by the same scale of pay as the members of the Armed Forces are. Technocracy calls the program 'Total Conscription,' since by its terms all machines, materiel, men and money of the nation would be conscripted into the service of the Nation.

'For such is the paradoxical character of our economy that when the Germans and Japanese cease to try to

By these terms our own government, instead of the present myriad private and corporate enterprises, would control the flow lines of all goods and services. This is the only method by which the cost of living can ever be controlled and held in check. You cannot have fire without heat, rain without clouds, nor inflation when and where there is no money, nor credit, nor prices, *nor financial structure to inflate*. With Total Conscription in operation pressure groups could press no more for higher wages and lower prices. No one of them would any longer have anything with which or on which *to press*.

Maximum efficiency in our domestic war economy is mandatory for final victory. Cash and credit, money, checks, debt and the devices of buying, selling and profit taking *are not* our offensive weapons. *Their* use only clogs the gears in our factories, hinders free distribution of the necessities of life, and withholds the full employment of our maximum strength for war. *But the blood and Iron, the Men and Materials of America*, the resources and productive ability, freed from Price System bonds and united under the specifications of Total Conscription *can* defeat the high cost of living and wipe out fascism at home and abroad *forever*.

Technocracy asks again, WHAT ARE WE WAITING FOR?

kill us it will be harder for most of us to keep alive than it is at present.' *Fortune* December 1943.

From The Camera's Eyevew —

The Real Story of America

From Material Furnished by Education Division, 8342-1

'When My Ship Comes In'

THE average American pursuing his average way from one year's end to another has little conception of the world of reality around him. Like a fish in the ocean, he is immersed in the artificial ideologies of the social structure of which he is a part. He plods along his well-worn rut, working, eating, sleeping, mating and chasing after phony recreation. A host of little worries, problems and obligations are snapping at his heels every day. His nose is on somebody else's grindstone all the time.

Occasionally he seeks surcease from his sham existence in the corner tavern where any man may become a big shot to himself for a time, and for a price. Or else he may indulge in the vicarious heroisms of Hollywood art, at the movies, or the 99-44/100 percent pure drivel of radio dramas where, in both cases, 'right' always defeats 'wrong' and virtue is triumphant in the end. This is supposed to constitute recreation and escape from reality. He has been told that it is good for him.

Somehow or other, though, he never finds complete satisfaction in his counterfeit existence. Ever present in the average American is a psychological longing that finds expression in the words of a popular song: 'Somewhere over the rainbow, way up high, there's a land that I heard of, once in a lullaby.' This yearning visualizes a far-off land of happiness, where all wrongs will be righted, all dreams will come true and his very own ship will come in, at long last.

Escape Into Reality

It is not physically possible to escape from reality, it is always present. One can only escape from one artificiality to another one with a different odor. Reality always follows and must be reckoned with in the end. That's what is dogging the average American. So he chases from one fraud to another while all around him, pressing in from all sides, are the physical realities by which it is possible for him and all other citizens to live and prosper. Indeed, these physical realities are becoming so insistent in modern America that it is becoming more and more difficult to deny them.

North America has progressed into an order of magnitude and complexity of operations in her civilization wherein the dominating forces behind the superficial social, political and economic facade are the laws of thermodynamics and the impact of technology. It is only by physical facts that we can live and prosper in the Power Age and these facts require very little discussion because they can be determined by measurement. Being dominated by physical laws this culture of the Power Age must also be directed by physical laws.

The superficial, tantalizing existence of the average American today is traceable to the futility of endeavoring to fit all social problems into the Procrustean bed of an obsolete political ideology. The facts which determine our existence cannot be determined by counting noses to get a consensus, when decimal points are necessary. We have outgrown the old standards. We are trying vainly to escape into the past which no longer exists; while the future is rushing at us with potentialities which begger description.

In order to understand the realities of living in the Power Age, it is necessary to know the physical history of America, the story of the impact of science and technology upon the social structure and the resulting instability produced thereby, together with the irreversible trend of physical events following that impact. It is not enough to know the technical aspects of science; millions are familiar with that now. One must also grasp the social aspects of science.

This fact is understood by only a relatively few Americans today and there is only one Organization set up to propagate knowledge of this type. That Organization is **TECHNOCRACY INC.** It is dedicated to a more efficient design of social and industrial operations. For our picture story this time let's escape into reality and pay a visit to the **DETROIT SECTION OF TECHNOCRACY INC. AT 9108 WOODWARD AVE.** There, on the walls, for all who care to see, is the Real Story of America in the form of maps, charts and mural paintings.

SEC. I
R.D. 8342

TECHNOCRACY IN

TOTAL CONSCRIPTION

MEN

MACHINES

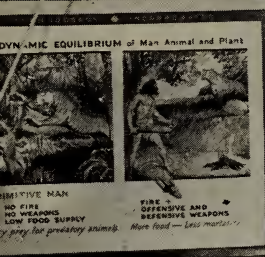
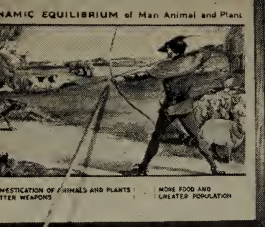
MATERIAL

MONEY

ALL TECHPHOTOS BY 8342-1

A morning view of Technocracy Hall, with two large show windows. The one to the reader's left has a large disk set up in front of a deep blue background, giving the illusion of a globe. The North American Continent faces toward the onlooker. The other window is used for literature displays, etc. Inside are offices, a meeting hall and work and recreation rooms. It's the center for all educational and social activities of the Technocrats of Detroit. It's open every day from 10 A.M. till WHEN? A.M.

Inspecting the maps comes first in our tour. Guide gives data on population, resources and available energy of various areas. The possession of ample energy and resources in any area dictates the necessity of technological coordination for a very high standard of living because it invalidates the human-toil, hand-tool scarcity methods natural to low energy and resource areas. America is the greatest technological potential in the world. Russia comes next. America's problem is one of abundance.



THE POSTULATES OF SCIENCE

A POSTULATE PARTAKES OF THE NATURE OF A FACT BUT DIFFERS FROM A FACT IN THAT THE OBSERVATIONS SUPPORTING IT ARE NOT CONFIRMABLE

- 1st POSTULATE
THE EXTERIOR WORLD ACTUALLY IS
- 2nd POSTULATE
NATURE IS UNIFORM
- 3rd POSTULATE
THERE ARE SYMBOLS IN THE MIND WHICH STAND FOR EVENTS AND THINGS IN THE EXTERIOR WORLD

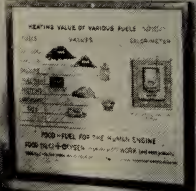
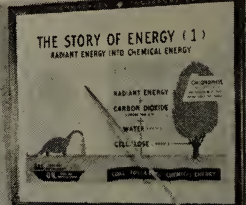
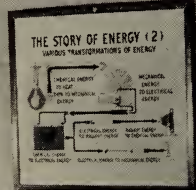
INTRODUCTION TO SCIENCE

SCIENCE - THE METHOD OF THE DETERMINATION OF THE MOST PROBABLE

A FACT - A CLOSE AGREEMENT OF A SERIES OF OBSERVATIONS OF THE SAME PHENOMENON - All observations must be susceptible of confirmation

A DEFINITION - AN AGREEMENT - wholly arbitrary in character - AMONG MEN

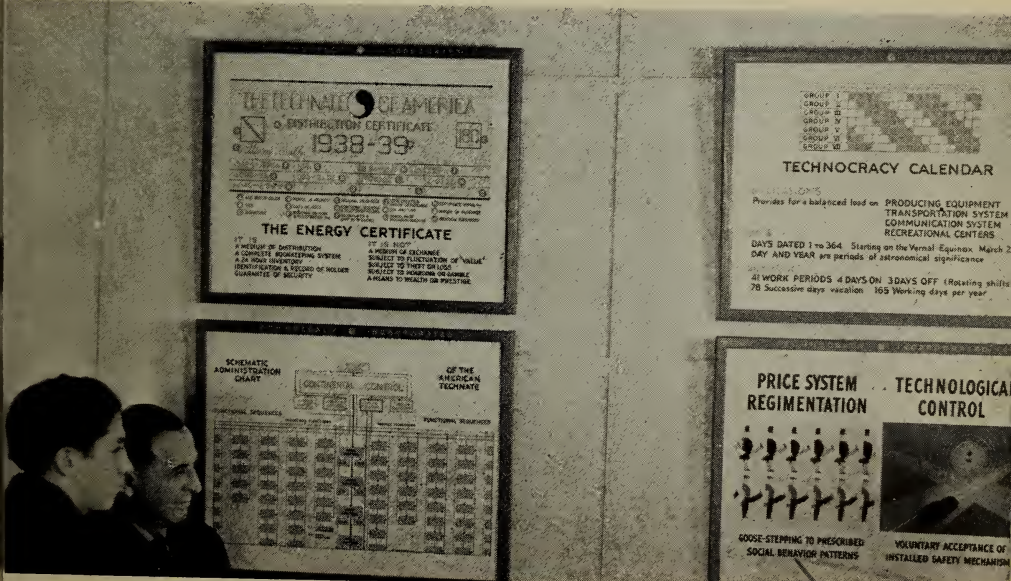
Science shows the correct way to approach the social problem. First comes the three basic postulates of science, then the nature of Fact and Definition and the scientific method. This is elementary and indispensable. Man's progression from the savage state can be measured by his rate of energy conversion. Naked and unarmed, he was prey for wild animals. With fire and club he could hold his ground. With domestic animals, windmills and bow and arrow he became more secure and dominating.



There is a perpetual struggle going on between all plant and animal life for a larger share of the Sun's energy. This creates a state of natural balance, i.e., dynamic equilibrium. Any species that captures more energy disturbs this balance in its favor. All plant and animal life pursues a fundamental 'S' shaped growth curve. Energy is basic to all life; it can be changed into many forms for use and it can be measured. The law of energy determinants is immutable.



Industrial growth curves follow the same 'S' shape as growth curves in the plant and animal world, starting slowly, accelerating to a compound interest rate and levelling off. Then they may remain constant, decline to a lower level or to zero. The interference control over higher industrial growth is the mechanism of the Price System. Goods cannot be produced except by creating ever more debt. This is already past history in America. Notice the chart of Income Levels in American life.



Illustrated here are the Energy Certificate, a non-debt creating medium of distribution; the Technocracy calendar, necessary to attain a balanced load system of production; and the Schematic Administrative Chart for technological control. All this is a scientific design to tip the factors of dynamic equilibrium in our favor. America must either go up or down. The design involves voluntary acceptance of scientific controls, because social change must be accomplished peacefully.

ARTS-FILL DAMS
POUNDING LAKES
REFORESTATION

PRICE SYSTEM
PRACTICE LEAD
FRESHEN AND
UTTER RUIN

SCIENTIFIC OVER-ALL PLANNING

FLOOD AND EROSION CONTROL



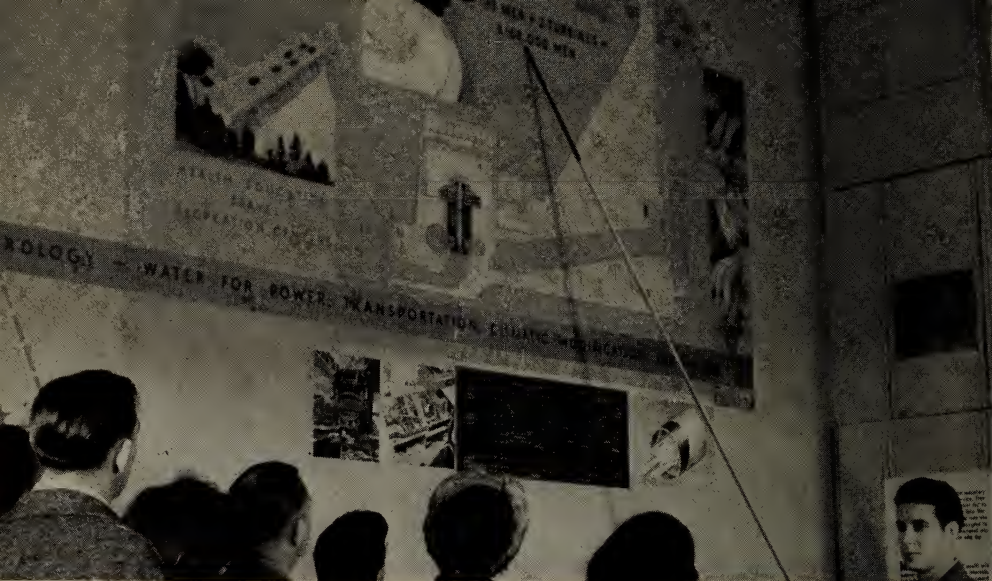
Overall view of mural paintings on north wall of the meeting room. They were designed and painted by Technocrats. For comparison with better known murals in Detroit, see *January-February Great Lakes Technocrat*, page 43. The North American Continent shown comprises 19 percent of the world's land area. It has the full range of climatic conditions and the lion's share of the world's natural resources.

Racially, it is the most homogeneous area on earth; geographically the most united; industrially the most advanced. It has over 2/3rds of the world's engineers and the largest body of skilled personnel, yet contains only 9 percent of the World's population. North America is one organic and functional unit. Abundance is possible on this Continent now.



Technocracy proposes the application of Science to this Continental Area. Since America is the richest loot in all history, it is necessary to consolidate this area; vastly expand our technology; build the world's most powerful Armed Force; construct Continental superhighways; dig Continental inland waterways; install a Continental power transmission system; and provide gigantic defense bases around its perimeter. From

the International Date Line on the West to a boundary line in the East reaching from the tip of French Guiana to Greenland is the minimum area for the maximum defense of America. Who shall say that this great motherland of the Power Age needs less defense? This proposal is the greatest project ever conceived by the mind of man.

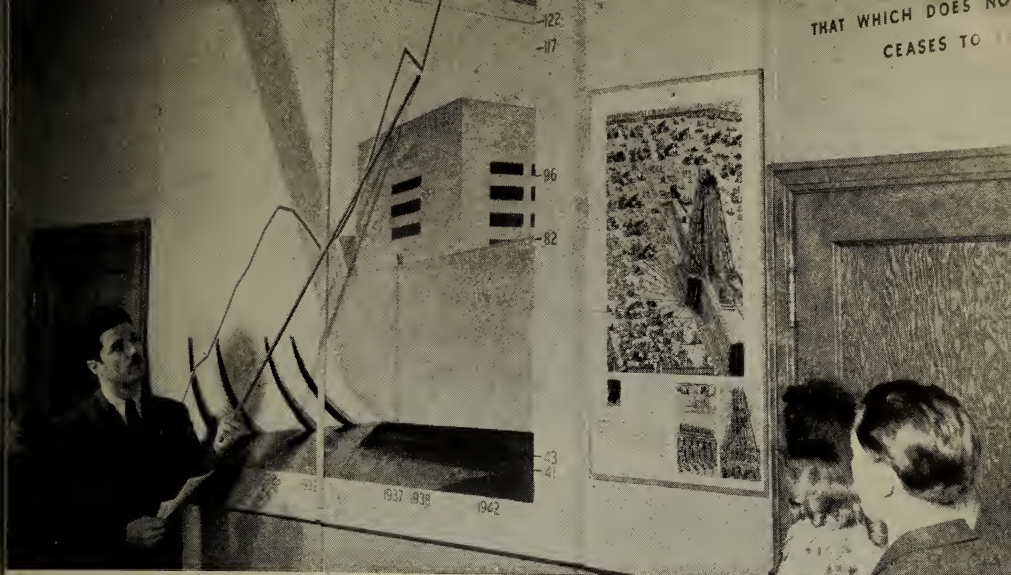


Two turbines added to the skill of 38 men equals the labor power of 3,168,000 men. Doesn't make sense? Yes it does. The social implication involved is food on the average man's table, shelter for him and his family against the elements and security for his old age. He had better learn its meaning. Below is a blueprint of the Continental power system. To its right is a cross-sectional view of the underground cable for transmitting 1,000,000 volts D.C., 3,000 miles, with only 10 percent line loss.

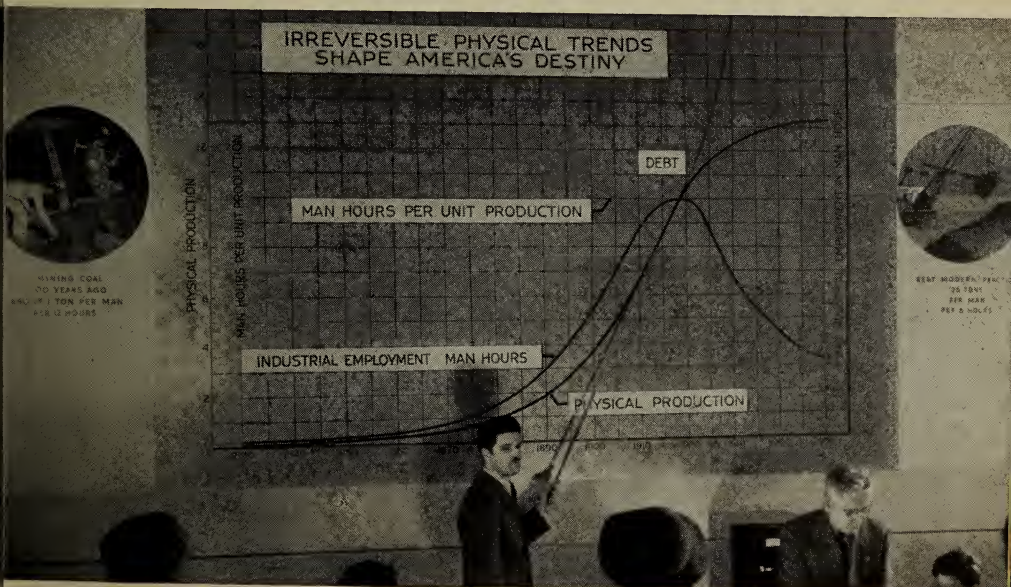


Millions of years of sedimentation deposited on America's surface 9 inches of fertile top soil. Every year 1,000,000,000 tons of it is washed into the oceans. Out of 1,903,576,620 acres, 41.5 percent are seriously eroded, 14.8 percent severely so, 7.6 percent useless and only 36.1 percent unaffected. One-third of America's resources have been literally sold down its rivers. Price System methods lead to erosion and ruin. Reforestation and thousands of dams are necessary to halt this waste.

THAT WHICH DOES NOT
CEASES TO

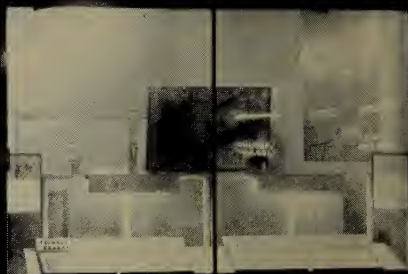
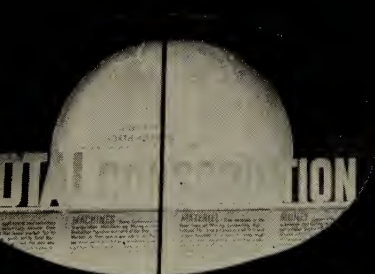


The greatest engineering feat of the Middle Ages was the moving of a 75 ton obelisk 800 feet from the Circus of Nero to St. Peter's Square in Rome. It required 907 men and 75 horses 18 months to do the job. Today a crane operated by one man can move 75 tons 800 feet in 10 minutes. In October 1943 the daily production of electric power in the U. S. was almost 700,000,000 kilo-watt hours. Multiply this by 13 and you get the number of men it takes to equal it. This is the Power Age. Get the idea?



One man could produce one ton of coal in twelve hours 100 years ago. Today in a modern strip mine one man can produce 25 tons of coal in 8 hours. Notice the 'S' shaped curves on this basic chart by Technocracy Inc. Notice how total man-hours and man-hours per unit are declining toward zero while production has risen to a high peak. The only way to produce more is to work less. These curves obey the physical laws of dynamic equilibrium. They hold the answer to America's problems.

TECHNOCRACY INC.



TECHNOCRACY IS AN OPEN BOOK

As night settles over America's greatest industrial city, the fluorescent lights blaze out bravely at TECHNOCRACY Headquarters. Until the early morning hours Technocrats work and plan for America's defense and future destiny. The social analysis of Technocracy is irrefutable. Its synthesis of a modernized social system is buttressed by the best scientific evidence available. If Technocracy is 100 percent wrong, then the worst that can be said about it is that it never did any one any harm. But, if it is correct then God help America, for no other power will be able to, if her citizens do not adopt scientific methods of control.

SINCE JULY 1940, 18 MONTHS BEFORE THE JAPS BOMBED PEARL HARBOR, THE SOCIAL PROGRAM OF TECHNOCRACY HAS BEEN PUT ON THE SHELF. No nation can achieve social change internally unless it is first free from outside aggression and inside treason. Technocracy warned against the rise of World Fascism as early as 1935, and spoke up repeatedly in the years that followed.

In August 1938, Technocracy presented specifications for the Army, Navy, and Airforce to repel any attempted attack from Atlantic or Pacific, and charged that the military budget of the United States was inadequate. In September 1939, Technocracy demanded the development of a Continental strategy and the planned generalship of all Continental operations for the security of America. In home defense activities, Technocracy has participated to the full. Our Section Headquarters have been used for Selective Service registrations, for first aid classes, and air raid warden work. Technocracy's mobile sound units are used by police and fire departments. On December 7, 1941, Howard Scott, Director-in-Chief of Technocracy, sent a telegram to President Roosevelt in the name of the Organization placing the entire personnel and equipment of Technocracy Inc. at the disposal of the Commander-in-Chief and pledging the unqualified support of Technocracy to the Administration's war effort.

SINCE 18 MONTHS BEFORE THIS WAR TECHNOCRACY HAS BEEN ADVOCATING TOTAL CONSCRIPTION. The trend of events is moving irresistibly toward the perilous post-war period ahead. Total Conscription will be even more necessary then than now. If we insist on winning this war at the high cost of Price System methods, we will be in great danger of losing the peace and sacrificing the greater destiny of America to pro-fascism at home unless we adopt Total Conscription of Men, Machines, Materiel and Money, with National Service from All and Profits to None. Total Conscription is the key to America's future. How about it, Mr. and Mrs. America? INVESTIGATE TECHNOCRACY.

Lives, Fortunes, Sacred Honor--or Profits?

by Thomas H. Gibbins

Patriotism Consists of Deeds

WE pledge our lives, our fortunes, our sacred honor.' These words, written into the Declaration of Independence by our forefathers, show to what length they were prepared to sacrifice to set up their own mode of social control, a mode of control that would be acceptable to a majority of the people living under its jurisdiction. They fought a long and bitter war to win that right, they sacrificed lives, fortunes and upheld their sacred honor to win that war, **AND THEY WON.**

We, too, are today fighting a major war spread to the far corners of the earth, though for different reasons and principles, a war against the world-wide conspiracy of fascist control. We dare not, **WE MUST NOT LOSE**, but are 'all of us' pledging our lives, our fortunes and sacred honor? One need only scan the daily newspapers and observe the actions of the people in everyday life to get the answer to that question.

Let's have a look at some of the facts of the situation and analyze them and see just who are or are not willing to pledge their lives, fortunes and sacred honor. First we have the pledge; and if need be the sacrifice of human life. The men and women in the Armed Forces have surrendered their Price System privi-

leges for the duration of the war, or the duration of their lives, whichever comes first.

They cannot collect overtime pay for the long, tedious periods of drill, study and training in preparation for combat. They can't go into battle under the protection of a 'cost plus' contract. The Armed Forces of Uncle Sam do not operate according to the principles of so-called 'free enterprise.' The anarchy of privileged individualism is unknown there. So it must be said that they are pledged and will continue to pledge and if need be to sacrifice their lives. Need more be said!

Treason Also Consists of Deeds

Let's look at the pledge of fortunes or wealth on the home front and what a sorry picture it is. People who are otherwise patriotic will go to almost any length to obtain more wealth and keep what they already have, regardless of the consequences it will have on their fellow citizens as a whole. The present system under which we are trying to function, being what it is, one cannot blame them, for they have been so indoctrinated with a Price System philosophy, which grew out of an age of scarcity,

that they cannot see the possibilities of the high technological age of abundance for all at which we as a nation have arrived.

What about the actions of some individuals and groups of individuals? What about labor? We find that we still have strikes, many of them, in spite of so-called non-strike laws and labor's agreement as a whole not to strike for the duration of the war. For many years the lawful right of labor to strike has been its chief weapon to use for gain. Can you blame labor for continuing to use this weapon for gain when everyone else is using every means at his disposal for gain also? It has been stated publicly that the coal miner's average wage is around \$7 to \$8 a day, long-shoremen in the San Francisco Bay area \$15 to \$17 per 10 hour shift, shipyard workers \$60 to \$90 per week for an 8 hour day and 6 day week. There are, however, millions in many lines of work who are still making only \$20 and \$30 a week.

There is such a wide differentiation in wages that there is little wonder that confusion, ill-feelings, strikes and continual changing from one job to another exists. At one of the major ports of the Pacific Coast, the turnover of personnel in many types of work ranges from 25 percent to nearly 100 percent per year, and this even now in spite of the so-called 'job freeze.'

For some time there has been a great hue and cry about the shortage of labor; while businesses, both large and small, have been and still are crying to high heaven that they are be-

ing forced out of business, many more will find it impossible to continue. Large firms will gradually be forced by the march of events to accept more and more government control, many of them will blame government, not realizing that by the same token of the march of events, government is forced to take action in order to conduct and win this Total War.

Through the exigencies of war, the government has become the chief paymaster, but business as a whole still likes to think it is operating on a free, competitive basis. Is it? Most of the business firms who are producing the actual tools of war are getting their 'cost plus' and are all selling to the same buyer, government. Is that competitive, 'free enterprise'? For the time being, they are on a 'gravy train'; others are on it indirectly.

Right now 'free enterprise' is conducting, planning and organizing dozens of post-war agencies to try and keep what is left of it off of the rocks when hostilities cease. Millions of dollars are spent, much time is being wasted, effort and material needed in the war effort is used in advertising via radio, billboard, newspaper and magazine, trying to convince the public that they are the shining exemplars of the greatness of America.

The handwriting is on the wall, but they cannot read it. All of this is coming about in the trend of events caused by the conflict of a system that is diametrically opposed to the physical laws of a highspeed technological set-up. The war has greatly increased the need for more and more

efficient technology. It is rendering the Price System unworkable.

Stumblebums Use Stumblebum

Methods

We are fighting a Total War. We are fighting for America, and for what America can be. If we really want to put our whole effort into it, if we want to really pledge our lives, our fortunes, our sacred honor, then why, solely for the sake of business, do we permit so much wasted time, effort and materiel? Why do we still have two, three, four dairy companies delivering dairy products in the same block, three to six bakery trucks delivering bakery products to the same stores, many others in the business of serving the people duplicating each other's efforts in the same block or area? There are still many business firms producing and distributing non-essentials that could be discontinued for the duration. Thousands of people living in Area A Travel to work to Area B, while thousands doing the same type of work travel from Area B to Area A. Not only is this taxing our transportation facilities to the breaking point, but we are using vital resources, such as rubber, metal, oil and labor, at a rapid and needless rate. Then there are thousands of older people, the incapacitated, the retired, the loafers and gamblers occupying much needed housing in crowded defense areas while workers are forced to travel many miles to and from work.

These are only a few cases of the

needless confusion, the waste of time, effort and materiel. There are many more, and it is all a result of Price System operations. 'Free enterprise' would lead us to believe that this is what we are fighting for. Their philosophy seems to be that if 'free enterprise' cannot be saved and maintained, then nothing else is worth saving or maintaining.

Many cannot conceive of any social system being acceptable or desirable without a 'free enterprise' Price System concept. With its demise, they envision stark horror and the whole nation engulfed in some sort of slavery. Nothing could be further from the fact. Modern technology, modern production and distribution of goods, if allowed to be conducted along scientific and engineering lines, plus our abundant natural resources, can and will win this war and create an abundant high standard of living for every man, woman and child on this Continent, regardless of what business thinks.

Public Honor Is Security

We now come to the question of honor, sacred or otherwise. We have been reading daily in the newspapers of black markets. Remember, it takes two to effect a transaction or sale of goods from one to another. There must be a lot of us on the receiving end of the goods, else the black markets could not exist. Then there is the little matter of many of our free private enterprisers indulging in the production of shoddy and inferior war materiel, as well as goods for home

use, and being hailed into court by our government. The question of crime was in peacetime the major and most costly problem of our government; wartime conditions are increasing crime and the cost of combating it. Penal authorities tell us that more than 95 percent of all crime has behind it the motive of individual personal gain. There are, of course, a good many other types of chiseling and conniving, indulged in for personal pleasure and gain.

When one hears, reads and observes all of this, it becomes evident that many millions of us are not pledging either our lives, our fortunes, nor our sacred honor. The reason we behave in this way is not because we are individually evil or nationally evil, but simply because the system being what it is, that mode of behavior is most natural.

The members of Technocracy Inc. are proud to belong to an organization which for more than a year and a half before Pearl Harbor advocated and put before the people of America the program of Total Conscription of Men, Machines, Materiel and Money, with National Service from All and Profits to None. The installation of this Victory Program would literally place us all in a position of living up to the pledge of life, fortunes and sacred honor, so that we may win this total war and the peace to follow in the shortest possible time and with the least loss of life. Many millions of people would find that they were in the best position that they have ever been in. It would injure no one; it

would make impossible the continuation of the deplorable conditions now existing.

Space here does not permit of a full and complete coverage of all that Total Conscription will accomplish. Visit your nearest Technocracy Section, listed in this magazine, the *Technocrat*, or the *Northwest Technocrat*. You will be supplied with literature and information on the one complete overall pattern of national operations.

Technocracy does not claim that its program is perfect, but it does claim that it is the most workable plan for solving the problem at hand yet advanced by any person or group of persons, and it has the facts to back up that claim. We challenge our critics and opponents to present a more workable plan. We will be with them 100 percent if they can.

This is a challenge to you. As an American, will you accept the challenge? If in so doing, you find that Technocracy is correct in its analysis and solution, we know that as an honest-to-goodness American you will recognize that we are the outstanding American organization advocating an American factual solution to an American factual problem.

The boys on the battle fronts are giving their all, for you and for me, and for what America will be when they come back. Are YOU giving or doing as much? Have YOU the gall to want to do less? If you would call yourself an American, YOU should have the guts to be out shouting to the housetops Technocracy's Victory Program of Total Conscription.

How Funny Are The 'Funnies'?

by Walter Allen

'Read Me The Funnies, Daddy'

IT IS reported that none of the newspapers in Russia carry comic strips or cartoons so familiar in American papers. The comic strip is of American origin but today has spread to most countries of the world. It is not likely that the present Government of Russia is responsible for the lack of comic strips in the newspapers there. It is more probable that it is due to lack of a demand on the part of the Russian people. They have developed other types of escape mechanisms.

Today in this country every daily paper large or small as well as many weekly papers carry one or more of these comic strips. There are a total of 270 of these features being published at the present time. The standards of many are very low and are just able to 'get by'. Some of the gangster-detective type are sadistic, others are fantastic. They are the products of the hectic times in which we live.

The original object of the comic strip was to provide humor for the reader, hence the name. Few today, however, depend on humor for their plot. Good and bad they supply an escape mechanism for millions of followers. Among these followers are some of our most gifted scientists as well as many in all walks of life.

We have the comic strip with us

today. Are they used as a conditioning factor in the Price System? The answer is for the most part, yes. They are an ingenious method of conditioning the American people along certain lines. The producers of our comic strips follow popular trends. At one time the gangster was the hero of many comics. Today it is the detective and now we have the glamorous, junior G Man. When the present war was apparently a long way off there was no military atmosphere to any of them. Now most of these productions carry war themes.

When a war bond drive is on, the characters will talk up bond sales. Recently an Oregon union protested that 'Little Orphan Annie' was anti-union. We have seen none that are pro-union. The newspapers are their main outlet and because the 'free press' of America is controlled by those who pay for the advertising these features must be kept in line. They are definitely a conditioning factor in the Price System.

Big Business is Not Funny

According to an article in *Newsweek* for December 27, 1943 Nelson Rockefeller's Office Of Inter-American Affairs spent \$50,000 creating Spanish and Portuguese versions of 'Heroes Verdaderos,' illustrating American war exploits and 'Nuestro Futuro' an anti-nazi comic. The Inter-American Office referred to this as

'serious literature using the comic strip technique.' It has since abandoned the venture.

In the U.S. the comic book business now rollicks 'along at 25,000,000 copies monthly' and retail sales add up to \$30,000,000 annually. 'An overseas edition of 35,000 copies of "Superman" goes to the troops each month.' Children, however, 'remain the best customers.' It is estimated that 95 percent of the 8 to 11 year old group read the 'funnies'; 84 percent of the 12 to 17 year group; and 35 percent of the 18 to 30 year group. The publishers say that after 30 the urge for comics slackens off. These publishers have now 'bolstered their

editorial boards' with clergymen and educators whose job it is to 'lull the fears of parents.' '*Six thousand schools now use the comics as supplementary texts.*'—italics ours.

As has been stated the authors and producers of comics have always followed the trend of events, after it is well under way. The trend of physical events in America is moving toward Total Conscription of Men, Machines, Materiel and Money With National Service From All and Profits To None. It will be interesting to see how the \$30,000,000 comic strip industry will follow this trend after it is well under way. Or will they? Don't be funny. Bilge gathers only in still water.

Which Side Are You On?

Three prominent and wealthy business men, one a New Yorker, sat down to lunch in one of our swank Boul Mich clubs the other day. After lunch they decided to have a few cocktails. By the time they were ready to depart their tab was \$36.00. 'Here let me have that check,' exclaimed one of the Chicagoans. 'My income's in such a high bracket now that this \$36.00 check will only cost me \$3.60.' 'Oh, no!' cut in the New Yorker. 'I'm paying this one. I'm entertaining you people on business and I've got a cost-plus contract with the government—so I'll make \$3.60 on the deal.'—Kup's Column, *Chicago Daily Times* December 19, 1943.

'According to one high-priced advertising writer, all the American soldier thinks about as he goes into

battle is the necessity of keeping America absolutely unchanged after the war. This sounds to me much more like the thoughts of a high-powered advertising executive as he sits down to fill out his income tax blank . . . If it (pre-war America) had been good enough, we wouldn't be out here now. We would have stopped Hitler & Company at the first rehearsal instead of waiting until they took their act on the road . . . If it had been good enough, we would be home now making sons and automobiles instead of assaults on fortified positions.'—Pvt. Irwin Shaw in *Yank* December 17, 1943 in a piece on policing and de-polluting Germany after the war. From a weekly letter to service men and women by W. J. O'Brien in *PM's Picture News*.

Lo! The Poor Dumb Indian

by R. B. Langan

Reprinted in part from the Department of the Interior Information Service, Office of Indian Affairs. (Italics ours)

400,000 Indian Givers

THE 'vanishing' American Indian is turning out to be 'one of the most potent minority groups assisting in the Nation's march to victory.' Since Dec. 7, 1941, 18,000 descendants of the original inhabitants of this Continent have joined the Armed Forces of the United States. In some tribes the number of able bodied men who have gone to war runs as high as 70 percent.

Indian women, girls and older men 'have produced more food in the last two years than they ever did before. Indians have raised and sold enough beef, mutton, poultry and fish to feed 220,250 soldiers for one year; enough cereals to feed 367,103; enough potatoes and vegetables for 52,057; and enough wool to supply clothing for 19,000 soldiers for one year.

In recent weeks, top-flight generals in every theater of war have vouched for the prowess of the American Indian in the ranks of the armed services. In a cablegram from Australia recently, General MacArthur said of the American Indian soldier:

"As a warrior his fame is worldwide. Many successful methods of modern warfare are

based on what he evolved many centuries ago. Individually he is exemplifying what the line fighter can do by adaptation of the characteristics of the particular countryside in which he fights. His tactics, so brilliantly utilized by our first great commander, George Washington, again apply in basic principle to the vast jungle-covered reaches of the present war."

In the various services, hundreds of officers are full-blooded Indians. You will find them commanding ships at sea, in the Rangers and the ranks of the paratroopers, piloting fighter planes and bombers, in charge of PT boats and as general officers.

American Indians today are fighting on every front of this war. And Hitler and the Germans know their metal. They discovered the American Indian back in 1918. In that year, just before the Boche surrendered, General Karl Von Prutch said:

"The most dangerous of the American soldier is the Indian. He is brave above all else. He knows far more about camouflage, inherited from his ancestors, than any modern soldier that has the benefit of science and great laboratories. He is a

dead shot. He needs no orders when he advances. He is an army within himself. He is the one American soldier Germany must fear."

In this war, it has been generally conceded, that physically most Indians have the qualifications for a brave fighter. Their long sleek muscles are built for endurance. The sense of perception of most Indians is so acute that they can spot a snake by sound or smell even before they can see it. Too, they have an uncanny faculty of weaseling over any kind of terrain at night, and are wellnigh indefatigable. The Indian also has better muscular coordination than any other race. They love the bayonet, which probably explains why they are the best bayonet fighters in the world.

There are countless stories coming back in regard to the valor of Indians on the battlefield and numerous honors and citations have been given. It would be invidious to pick and choose but among those cited have been Assiniboin, Cherokees, Chickasaws, Choctaws, Crows, Iroquois, Kiowas, Navajos, Pawnees, Piutes, Sioux, Zuni and many others. The North American Indian has 'laid it on the line' for America.

'But Their Name Is On Your Waters'

The American Indian has a slightly different concept of America as compared to that of the white man. This

may explain in part why they have risen so nobly to defend America. Their individual and collective racial memories are far from overflowing with gratitude toward the white man's Government. They know that the 'white faces' drove them from sea to sea; hounded them out of nearly every worthwhile piece of territory they ever occupied; broke treaty after treaty with them; and to this day treats them with shabby condescension.

No! It is not because the Indian loves the white man that he fights for America. It is because he loves America. He is fighting for it now for the same reasons that he resisted the 'white devil' with his 'long knives,' his rifles and his poisoning whiskey. The Indian is the original inhabitant of the North American Continent. His concepts grew out of the physical America that he loved so well, and are a part of it. When the first white men came to these shores and attempted to transplant the European ideologies they brought along, the Indians resisted.

European ideologies were foreign to him and to America, and still are foreign to both. The Indian's concept was that he belonged to America. The white man's concept is that America belongs to him. The white man says, 'This land is mine.' The Indian says 'I belong to this land.' There is a world of difference. To the Indian his land comes first. To the white man his property rights in the land come first.

This Indian concept made it impossible for him to understand the

sacredness of property rights. To him the land was a thing to occupy and use. When one ceased to use it, his 'right' ceased and some one else could take over. That's where he got into trouble with the white man. He was willing to sell a part of his territory for next to nothing; or to give his white 'friend' some article as a token of his esteem. But if the white man ceased to use it for a time, or if the Indian needed it again, he was likely to ask for its return. So, the term 'Indian Giver' arose.

We Belong to America—Not Europe

Considering the mess that European ideologies have made of America as compared to what could have been done scientifically, especially in the last 20 odd years, perhaps the Indian's instinct was correct. The ideologies with which we are attempting to wage this total, technological war are all European. The list is long and sickening; rationing, price ceiling, priorities, taxes, black markets, business first, and unequal sacrifice on the home front are only a few.

They are foreign to and incompatible with America's technological civilization. They are inimical to and out of tune with the ideal of National Service as practiced by the Armed Forces. There is a much better way, a native American way, a scientific way, to wage total, technological warfare. That is by the Total Conscription of Men, Machines, Materiel and Money, with National Service from All (equality of sacrifice, 'I belong to this land,') and profits (sacredness of property rights) to None.

In 1939 Yale University and the University of Toronto held a seminar conference on Indian problems of today. A discordant note was struck by Indian members of the conference in these words.

"That you, our white brothers, will be invited to participate in any conference that we Indians may call in the future for the purpose of finding solutions to the white man's dilemma in a social and economic order that has, during the last decade, *gone on the rocks.*"

LO! The poor dumb Indian!

Another European Importation

Neither house mice nor rats are native to America. All of the three species of rats now prevalent here have been imported, from Norway, Central Europe and North Africa. The black and Alexandrian rats from Europe and Africa, respectively, arrived with the first settlers of Jamestown. Some of them could probably claim to be descended from ancestors who came over on the Mayflower. The brown rat from Norway came over

at the time of the American revolution.

Damage caused by rats in 1943 reached the highest figure in history, possibly \$200,000,000. Rats living on farms occasion an annual loss of at least \$1.00 each; and in towns and cities the value of material destroyed by rats is probably more than \$2.00 each.

—From Fish and Wildlife Service Department of The Interior.

The Devolution Of Statesmanship

by Ethna Hackett

Wishing Won't Make It So

WISHFUL thinking is the hallmark of the talk put out today by the so-called leadership of the country, financiers, businessmen, professors and politicians. Wishful thinking is its common denominator.

We must plan, they say. We must give the peoples of all the world liberty, freedom, plenty and prosperity. We must see to it, they urge, that postwar plans are made now to prevent chaos, then to bring trade relations with the world in harmony with American private enterprise. God is good, people are kind, one nation needs this, another that. We must plan for more American business.

One group of engineers, technologists and scientists began 25 years ago to work on the facts and figures of America; not as the economist would on the pathology of debt creation, money and profits, but with *what we have*, what we can produce. This group, now a Continent-wide membership organization, publishing this and other periodicals, produced, before America entered this war, an overall design of national wartime operations, with a clear picture of what we are fighting for and what we are fighting against. Technocracy began by stating that the only way to win this war and the peace is by *designing* our national operations, not by wishful thinking.

One hundred years ago, one machine—man—produced 98 percent of the physical work done in America. Only 2 percent was done by mechanical equipment using the extraneous energy of coal, oil, gas or hydroelectric power. Today, it is exactly the reverse. Over 98 percent of the physical work is done by powered equipment using extraneous energy; 2 percent of the physical work is done by man. This represents a complete change in the physical world of producing and living. It is a technological change in the life of humans, leaving nothing of the old but hangover habits. Our folkways are in direct opposition to our production methods.

When the collapse of business came in 1929, what happened? Humpty Dumpty fell off the wall, and all the king's horses and all the king's men have been trying to get Humpty Dumpty back on the wall again—all in one piece. One hundred years ago was the age of natural scarcity. Goods had value in accordance to their scarcity which was an actual scarcity owing to man's physical inability to produce an abundance. The total per capita production was low. Today, to turn out the equivalent energy of five electric power plants in New York would need 64 million men, if we used the power of men's muscles. We would then be using manpower, instead of extraneous energy. The manpower does not exist

to do this work. What is the difference between a manhour and a kilowatt-hour? Between manpower and horsepower? Our standard of living, our war effort would be impossible without these machines.

After the crash in 1929 we had 10 years of poverty, relief, WPA, and all the other letters of the alphabet combined. Why? Because there was a sudden scarcity? Because we could not produce enough? Or because the country would not awaken to the change of procedure necessary to develop and control technological advancement and to operate it scientifically for the maximum benefit of the population? Technology is taking away man's individual earning capacity, *but* is producing abundance beyond the capacity of the traditional business pattern to handle.

The Best Way Out Is Up

Technocracy has talked all these years of technological procedure and control. It has been derided, ridiculed, ostracized, but has kept on and maintained that mental integrity necessary to a fact-finding approach. 'A fact is the close agreement of a series of observations of the same phenomena.' Technocracy was not formed because people wanted to get into politics, nor to start a new political party. Technocracy was formed to make people think. Howard Scott insulted them in large audiences. They went away mad, but they woke up. They tried to disprove Technocracy, but they could not. To understand Technocracy's approach it is necessary for the

average American to change his outlook, to work differently, to get a scientific background, to think objectively.

What is the cause of the present tragic mental confusion? Lack of food? Lack of manpower? Lack of machinery? Lack of trained personnel? What is the answer of the average person and what is the answer of the Technocrat to those questions?

We see a picture one day of \$10,000 worth of potatoes rotting, then sold at \$1.00 a bag. A few days later restaurants sell potatoes at 15 cents to 20 cents each. This is only an infinitesimal part of the whole problem.

The men of this nation can solve the problem on the home front. We can liquidate our pro-fascists at home and defeat our fascist enemies abroad as well. War wages, war profits and war racketeering, while our brothers, husbands and friends are spilling their blood all over the world, *can be stopped now*. When men are conscripted for the Armed Forces, they give up their right to private enterprise, to chisel, their right to bargain. They have no commercial rights, no right to make money on the side. 'Theirs not to reason why, theirs but to do or die.' The civilian population can do as much in this emergency.

Equal service from all, profits to none is the answer. The government can conscript all money, machines, materiel and all man and woman power, and place all on the same basis as the Armed Forces. Total effort, total efficiency will win a total war quicker and ensure the peace; a peace without fascist interference.

This is a blueprint for victory. It is Technocracy's blueprint, ready and waiting to be used by the U.S.A. Perhaps we will not like it, maybe it will upset some of our age-old concepts.

HOW TO MAINTAIN SCARCITY

(In Four Easy Lessons)

According to *Bread & Butter*, the weekly release of Consumers Union for January 1, 1944. 'A tidy little time bomb is ticking away quietly in the governments Inter-departmental Committee on Leather. The time bomb is a factory method of treating leather with oil or wax to make it as much as 40 percent more durable than untreated leather. Despite the fact that shoes are so scarce they have to be rationed, manufacturers are valiantly resisting the use of this new process.'

Labor unions have a right to refuse to use labor saving devices according to a decision of Federal District Judge A. F. St. Sure of San Francisco, California. He dismissed anti-trust indictments against 78 persons, contractors and labor unions. The unions contended that painting with spray guns would cut down work for their members. The governments charge was restraint of interstate commerce. Citing the United States Supreme Court's decision of February 15, 1943 in a suit resulting from a musician's union ban on recordings the judge said that the highest court had decided unions could combine to increase employment by eliminating use of mechanical devices.—*Cleveland News* April 4, 1943.

We will have opinions, beliefs, fears. But this is a war cry! We must rally together or go down to gradual defeat and chaos. We can use our own collective brains to do a collective job.

Not so many months ago there was a shortage of hogs coming to the slaughtering markets from the farms. There was no shortage of hogs on the farms. But hogs were held back purposely by growers who wanted higher prices. There was a hog pressure bloc at work. The consumer felt it. Butcher shops couldn't supply their customers with pork.

Now so many hogs are coming to market that the packing plants can't take care of them all. The pressure bloc stood it as long as possible. It had to give in when the hogs ate the farmers' profits up. Feeding corn to hungry hogs is a costly business. So hog shipments are the heaviest ever received. Butcher shops have plenty of pork.

Many farmers are writing letters to newspapers protesting against strikes and slowdowns in war plants. The pig that was kept away from market for no other reason than that the farmer wanted more money for his work—the pig represented his work—symbolized just one form of slowing down the war economy.—*Chicago Daily Times*, January 23, 1944.

770,000,000 pounds of fresh food were wasted on the ground, unharvested, in 1942 in the state of California.—*Business Week* August 21, 1943.

Technology Marches On

by Research Division 8741-1

Do Machines Displace Men?

MODERN Machines Save Manpower' was the somewhat frank title of *Mill & Factory* magazine's leading article in its November 1943 issue, sent to production executives in all major industries. Of course, this was not news to Technocrats, nor to engineers either. But the American public, especially those at work, still aren't sure it is true. So we'll quote, with permission of this leading Price System trade magazine, some of these cases where technology is now in use to cut down man-hours. After all, why wait until the postwar period? Isn't this the American way to do things?

All are directly quoted, and we leave you to supply the comments: (parenthesis and italics ours).

Use of Monorail. The installation of a light gantry crane and several monorail runways over the storage space in a yard adjoining a rail siding, permits two men to do the heavy unloading work previously done by 16 men. Result: 14 men released for other work in the plant.

Use of Lift Truck. The purchase of a single, modern high-lift truck . . . efficiently replaced four platform (hand-driven) trucks . . . The lift was able to stack materials directly

and quickly, requiring no additional personnel to help load and unload. Result: Four platform trucks and their operators released . . . two warehousemen who previously helped load and unload . . . were released. (Total of six men released by one man driving an automatic truck.)

Car Puller Saves Manpower . . . a stationary hoist mounted on railroad siding to serve as car puller permits one man to move freight cars . . . eliminated former practice of calling a crew of men. . . Result: No longer necessary to take a crew of men from other duties.

Power Scoops. Four men with wheelbarrows formerly unloaded box cars of bulk materials. . . The installation of a power scoop now permits one man to handle the same job in less time. Result: Three men available for other work.

Broaching Released Men and Machines. A special nut was being finished on old style machines at the rate of 125 per day per machine. This necessitated tying up 24 of these machines for this work in order to attain the required output. A single broaching machine set up for this type of work easily han-

dled an output of 3,000 pieces per day, thereby doing the work of 24 old machines. Result: 24 old machines and operators made available for other work.

Machine Sweeper. It formerly required four floor sweepers using hand brushes to clean up the floor of a plant each night. By using a machine sweeper, one man was able to sweep this area in *half the time* and do additional cleaning in an adjoining building. Result: Three men relieved for other work; one man available half his time for supplemental cleaning jobs.

Special Press for Tire Rings. Formerly five workers with mallets drove the locking rings under the wheel rims, when assembling rubber tired wheels for combat vehicles. With this new press, a single workman now centers the wheel, pulls a lever, and four iron claws under 21 tons pressure are lowered to snap the ring in place. Result: Four men released for other work; 2,500 man-days a year saved.

Broaching Turbine Blades. The use of 11 modern broaching machines for machining turbine blades permitted the elimination of 60 other machines and operators who were previously doing the same job. The new machines proved so efficient that 11 additional ones were installed to replace 60 other machines. Results: 98 men and machines released for other work.

Overhead Duct Saves Man-

power. When a new machine was installed or a machine moved to another location, it was necessary to run conduit lines and pull wires before the machine could be put in operation. This averaged about 16 man-hours—two electricians doing 8 hours work. The use of an overhead bus duct system and pre-cut and wired connecting circuits permitted one man to do the job in about one hour. Result: 15 man-hours saved on each machine installation.

Machine Replaces 8 Lathes. The installation of a 6-spindle automatic screw machine for use in turning out . . . quantities of coupling parts, permitted a company to turn over 8 lathes, previously used to make these parts, to another department . . . Results: Eight machines and 7 operators released for other work. The (1) operator left to run the new machine could at the same time handle work on adjoining machines.

Centralized Lubrication. By this system all bearings are lubricated in less than 10 minutes from one safe central point. It does not overlook isolated or inaccessible bearings, and it eliminates outage time for bearing repairs which may have been necessary by hit-or-miss methods by hand. Result: One man lubricates more bearings than ten men.

Nine Operators Instead of Forty-One. Nine 6-spindle auto-

matic machines with one operator each are able to produce the same output of airplane engine cylinder sleeves as 45 single spindle machines. Result: A saving of 39 operators. (Nice work, that!)

5 Million Man-Hours Saved.

The substitution of a powder metallurgy technique for orthodox machining operations in the manufacture of a small part in . . . quantities, results in a saving of 5,000,000 man-hours per year. A few presses to be used for the new process, released an entire machine department and its operators for other work. Results: 5 million man-hours saved.

Use of Tumbler in Metal Spraying. It took an operator one day to spray molten aluminum on small parts arranged on wooden racks. By putting these parts in a tumbler which kept them agitated so that all surfaces were exposed to the spray of molten aluminum, the operator was able to spray 1,000 parts in 12 minutes. By this means he was able to produce the entire output of himself and three other operators in less than 1 hour. Result: Three men available for other work; one man available for 7 hours work of another kind each day.

Welded Construction. In the automotive field, the construction of a huge tractor-scraper unit was made possible by arc welding. In addition to cutting equipment investment almost in half,

and reducing the cost per yard of material moved by approximately 54 percent, two units of this type require 7 less men than comparable equipment of shovel, trucks and bulldozer. Result: Seven men available for other work.

We want to point out three important factors in this list, chosen at random from many more examples of producing more by working human toil less and technology more.

First, with one exception (the powder metallurgy) no *basically new* technological methods were mentioned, only examples of advantages in using machines *already developed*. Brand new techniques such as electronics, powder metals, plastics, continuous-flow, etc., would put these machines on a not-so-startling basis.

Second, in each case the company must get its investment out of the new equipment, so the machinery must be used at a higher load-factor than hand tools and methods, to justify themselves.

Third, in every instance no mention was made of gun, shell, explosive, or other purely war products these machines were used for to replace the toil and sweat of expensive, inefficient man-hours. In other words, these are plants producing essentially the same products for peacetime, civilian consumers, in that postwar America where business has made glowing promises of a helicopter in every garage and a job . . . or maybe *Mill & Factory* should not have been so frank.

TECHNOLOGY MARCHES ON!

A Primer of Technocracy

PRELUDE TO THE POWER AGE
BY EDUCATION DIVISION 8741-1

In the first part of this three part acticle we outlined the fundamental role which energy plays in all life on this earth. The progression of man from savagery to the Handicraft-Agrarian stage of social life was traced briefly. From the very beginning man has been dependent upon energy. For thousands of years he lived in an environment of natural scarcity because his ability to produce was held down to the output possible with human toil and hand tools. Then came the re-discovery of America and the first practical steam engine. The stage was all set and the curtain rose on the industrial revolution.

Great Events Or Great Men

On October 12, 1492 Columbus touched land on the island of Guanahani in the West Indies. That was 451 years ago. The three small caravels driven by the energy of the wind with which he navigated the uncharted sea and the crude astrolabe employed to estimate latitude and longitude typified the simple science of that day.

It was the age of Leonardo de Vinci, Copernicus, Kepler, Galileo, Gilbert, Vesalius and Gutenberg. The first principles of modern science were just emerging from out of the long medieval night. It was an age of human toil and scarcity.

Columbus' re-discovery of America did not bring about any fundamental change in the way men lived. It added nothing to his mastery of energy conversion. Production, exchange and communication went on much as before in Europe. The same methods of living and working were

introduced in America and continued unchanged for almost 300 years more. The Kingdoms of the old world scrambled for possessions in the new. Colony after colony was established here. Generation after generation of men and women grew to maturity and decayed early in an environment of incessant toil, struggle and ever-present natural scarcity. Life was a hand to mouth existence for the great majority. On the surface and under the ground of this new country were rich deposits of natural resources. There were sleeping giants of energy in the land.

The early Americans however lacked the knowledge and methods to take advantage of this wealth. The white population increased slowly and colonization and exploration went on apace. Yet there was little change in the way men lived. America had promised much in the minds of men, but physically it yielded little except a change of taskmasters.

Ring Out The Old, Ring In The New

On the fourth of July, 1776, 284 years after Columbus touched upon the outposts of America the Liberty Bell rang out at Philadelphia in the British colony of Pennsylvania, to proclaim American independence from England. This historic occasion like the achievement of Columbus promised much in the minds of men but yielded little except a change of taskmasters and a new set of abstract ideals.

However, on the eighth of March in that same year, just 103 days before America proclaimed its independence from England an event occurred that marked the highest point up to then in the progression of mankind. On that day the firm of Boulton and Watt tested the first practical,

single acting steam engine in pumping water out of a coal mine. It worked! This event introduced a fundamental change in the means whereby man lived, for it stepped up his ability to use energy many times, and signaled his major victory so far over the yoke of the past.

At the scene of the test Matthew Boulton is reported to have said to his partner James Watt: 'Mr. Watt I hope and flatter myself that we are at the eve of a fortune.' These words struck the keynote of the industrial revolution then being ushered in. Like the few preceding high points in the history of mankind this scene was pregnant with a meaning which has steadily increased through succeeding generations.

Next Issue: *America On The Go*

Belief Is Not Knowledge

'The mightiest fact of modern times is that man now can build machines to do enough work, and has enough scientific mastery of nature's forces and materials, to lessen his poverty. Still more productive machinery and still more facts are certain to appear. . . . Not long ago no more goods could be produced than could be created by the muscles of men and animals, with slight help from wind and water. Now electricity, steam and petroleum—engine muscles—do immense work. Now precise facts about soil, metals, livestock, about all sorts of things, have taken the place of guesswork . . . Human mastery of nature is far from complete, but it has multiplied many times in the last two or three gen-

erations. Man's mastery of himself has some 'distance to go, too.'—Wheeler McMillen, editor of *Farm Journal* magazine, in Jan. 1944 issue. (He is the leader of Farm Chemurgy movement)

'We are getting to a point where beliefs and opinions are having less and less effect on the world's activities, but where *technological progress* and the great increase of technical departments in government . . . are beginning to impress even the public with the fact that *knowledge rather than belief* is needed to make the world go round . . . this technological age where the job rules, where results count.'—William B. Stout, Industrial Designer, in *Petroleum World*, 1/43.

Technocracy and Your Trade

WILL THE 'OKIES' RETURN?

by Pvt. Arland R. Meade

Out Where The Tall Corn Grows

AN Iowa farmer has produced substantial evidence in support of Technocracy's analysis and predictions, according to a news release of the U. S. Department of Agriculture. The Rural Electrification Administration gave him an award for his accomplishment, the first award of its kind. Technocracy was not mentioned in the award, but the evidence by any other name would be just as technocratic. Here is the story.

Ralph Childs, of Manchester, Iowa made a very simple and fundamental step. Last year he traded two good flesh and blood hired men for 10,200 kilowatt hours. These 'electrical hired men' did not sit down; they did not get sick; they did not waste time arguing politics, or anything else. They did not take holidays with or without pay; they did not strike; they never had sore or tired muscles.

In fact they cooperated so well that as compared to the previous year Mr. Childs farmed 80 more acres; doubled the farm pig production; kept twice as many laying hens; brooded 500 more chicks; produced 7000 more pounds of butterfat; yielded 5,480 dozen more eggs; kept 45 more beef animals.

Successful Farming in its January, 1944 issue summed it up as follows:

'In short, the production of food units has jumped 370 percent on the average.' Electrification of the Childs farm had brought such an increase in production with such decrease in manpower used that the REA gave Mr. Childs a new award, and spread the news by press and radio to every state in the union.

The use of extraneous energy, that is, energy derived from inanimate sources had produced almost four times as much food as before and at the same time had freed two men for the armed forces. This is all to the good.

Keep What Home Fires Burning?

But there comes a day of peace. And, do the two displaced men come back to resume their jobs? What jobs? The pumping of water for the cattle, a job which is being done by electric power at a minute fraction of the former cost? The mixing of feed, which is being done by fast-mixing machines operated by electricity? The sawing of wood? Turning a grindstone for sharpening tools?

No, they cannot resume jobs that are non-existent. Thanks to electrical energy, the farmer is producing much more with much less human labor. There is no need to rehire the displaced workers.

Try the neighboring farms? Same story. Well, get out of the dairy, the poultry houses, out to the bigger farms where there is open field work? Surely the long furrows are not electrified?

No, not entirely, but in America there is no escape from the use of extraneous energy. No longer are millions of men used to drive and care for millions of horses and mules, for tractors, using extraneous energy from fuel oil are rapidly eliminating the less efficient equine horsepower. From the first year of World War one to the first year of World War two nearly 12,000,000 of our horse and mule population disappeared. Their work is being done by fewer than 2,000,000 tractors. The 'Giddy-up-Whoa' jobs are rapidly receding into that limbo where went the 'Man With The Hoe', the 'long line skinner' and the itinerant harvest hand.

Perhaps our disemployed farm hands can all go down to the Sunny South and get jobs picking cotton? Surely this is a job that no machine will ever do—so we have been told. Can they? Echo answers, NO! Years of experimenting have been done on this tough problem and more than one successful machine has been built. On a California plantation (beg pardon, ranch), machine picking cost \$1.00 per 500 pound bale while hand picking cost \$32.00. Can labor compete with this machine under a Price System?

The International Harvester Co. is all set to start producing two-row and one-row cotton pickers as soon as war needs of critical metals are re-

laxed. Other companies are also set to produce cotton pickers as soon as priorities will permit. At the same time major changes are being made in cotton ginning. King Cotton's throne has long been shaky. It will fall completely when American armed might, created and backed by American technology, topples the thrones of the fascist states of Europe and Asia.

Tomorrow, Today Will Be Yesterday

Should our farm workers turn to the city they will find the same trend at work, the displacement of human labor by extraneous energy, long ago predicted as certain by Technocracy. *Successful Farming* stated that the Childs farm at Manchester, Iowa 'experienced a revolution-bloodless, but as significant futurewise as the contests of the liberals in Spain or the fateful march of the hitlerites into Poland.'

Correct, and it is but a start. Ralph Childs farmed 80 more acres last year with less labor. That's the only way it can be done. Power farming, high power farming, will bring about the consolidation of large tracts of land into one operational whole. Agrotechnological farms 25 miles square are perfectly feasible. There, close to the source materials, in an agrochemical city in the center of the area, the products of the soil will be processed into plastics, industrial alcohol, synthetic rubber and so on through the list of products our science and technology can create for America, when the yoke of price and profit have been removed.

The two displaced workers on the Childs farm are but two of millions

in the same boat. They have millions of brothers in the urban areas. If they will read through the factual analysis as given in the *Technocracy Study Course* they will see how science and technology have created a problem that is new under the sun, and which cannot be solved at a price for a profit. The extension of science into the social field will not only remove the problem but will make America a land of peace and abundance. All labor as well as the farm worker has no other salvation.

The first step in that direction is the

Total Conscription of all resources and manpower into a unified and efficient war effort. Total Conscription for war will provide the groundwork for the transition to peace without the crisis—a dangerous one—of many millions of unemployed, urban and rural, roving our land seeking food and shelter.

Total Conscription of Men, Machines, Materiel and Money With National Service From All and Profit to None is the only program that will prevent a nation of 'Okies' in the not so distant future.

More Of The Same

A case cited (in the Rural Electrification Administration annual report) is that of a farmer in Cherokee County, Georgia, who spent 6 hours a day pumping and carrying water for 4,800 chickens.

'With electric service he increased his flock to 15,000 chickens. His electric pump brings the water to them and he has nearly all his time free for other farm tasks.' . . .

'Electricity,' the report states, 'has in many areas helped break production bottlenecks, especially where the pinch was felt in the exodus of skilled dairy and general farm hands. . . .'

The reports also calls attention to the substantial increase in average farm consumption of electricity, which average increase was 14 kilowatt-hours from June, 1942, to June 1943. In heavy food-producing states the average increase per farm went as high as 26 kilowatt-hours in some cases.

Although large-scale construction was virtually halted in the summer of 1942 because of the shortage of materials, the number of consumers served by REA borrowers increased more than 60,000, or 6.17 per cent, during the year ended June 30, 1943.

The increase, raising to 1,041,000 the total number served, is primarily the result of farm connections, authorized by the War Production Board to stimulate greater food production.—U.S.D.A. Release.

'If America is to avoid unemployment and depression at the end of the war she must find some way of increasing production by \$50,000,000,000 over what it was in 1939. We have not the ghost of a blueprint to guide us.'—Leon Henderson. How about Total Conscription?

In The Question Box

BY EDUCATION DIVISION 8741-1

This department consists of actual questions asked and answered at Technocracy meetings, plus those sent in by readers.

DO you know of any other way of of living besides the system where the people pay parasites to force the people to obey the parasites. A.D.

Yes we do! But first let us clearly understand what we both mean by parasites. You mean the kind of parasite that lives off another body—people that live without effort off profits, people that live through useless occupations, and people that live by outright crime and deception. These are the social parasites and we will deal with them later in our answer, but first let us point out that in relationship to our consumption of energy all of us Americans are parasites on the raw materials, energy and technology of this Continent. This is not said in a derogatory manner. It is just a way of expressing the fact that none of us return to society an equivalent in the energy or materials we consume.

This is because we are a technological society and physical wealth on this Continent is not produced by our physical effort. Ninety eight percent of all energy used as power in industry today in America, is derived from sources outside the human body. The

role of human labor in production and transportation is supervisory, attendant, or accessory to the machine itself.

Technology and the conversion of energy for industrial use are an outgrowth of that body of knowledge called science. Scientific knowledge grew up slowly over a long period of time and was contributed to by countless known and unknown individuals. It can be said that science is common property. Today in America our social structure has reached a point of development where it is a fact that all of us are parasites on the past, are beneficiaries of natural wealth created in the past plus the advance of scientific knowledge.

This is not meant to condone the anti-social activities of those you call parasites. They will presently be liquidated along with the rest of us if all of us North Americans don't get our heads together and agree to adopt a scientific design for operating all social activities.

When we do that A.D. we will have 'another way of living' much better for all than our present system. And, such a design is all worked out.

Isn't Total Conscription exactly the same thing that Germany and Japan have? G. B.

No! It's exactly the opposite. Germany and Japan have conscription of

men and women alone for the benefit of wealth and privilege.

Total Conscription includes everybody. It means National Service From All and Profits to None. No individual or group is exempt. It's a case of all for one and one for all. All fascist countries have conscription of labor, but no fascist country has Total Conscription.

If as you say, America has the lion's share of all the World's natural resources, would it not make future wars impossible if we kept the present war going until the resources of all our enemies are completely gone? J.H.

You forget that as large as America's resources are they are not limitless. If we kept this war up long enough the United States would find itself impoverished. Even now the end of our known oil and high grade iron ore is in sight. We must *conserve* our non-replaceable resources. But of course business does not recognize this fact. The question is do we want good business or a quick victory.

Is there a possibility that the Russian system may drift into Technocracy? R. C.

Russia still has a Price System but it has installed a controlled area technology. All of Russia's accomplishments are due to this technology and not to the ideology of its communism. Scarcity still exists in Russia, but as and when the per capita conversion of energy in Russia reaches a certain level it will abolish scarc-

ity and Russia will have to adopt a Technocratic system. It will be easier for Russia to change over than for us, but they will not reach it for a number of years.

Will Technocracy when put into operation reduce the selfishness of the people? E. N.

It all depends on what you mean by selfishness. If you mean a normal amount of self interest which does not have an anti-social effect, then, no. If you mean hoggishness, then, yes. You can't blame people for trying to get ahead under the Price System. It means economic security. In a technological control the present driving type of incentive to escape economic insecurity wouldn't arise. Economic security from birth to death would be guaranteed to every citizen as a right of citizenship. The acquisitive instinct would then be diverted into more socially useful channels, such as the desire to excel. This is a powerful urge, but doesn't get you very far under the Price System. Also in a technological control individual initiative would for the first time be free to express itself since all citizens would be guaranteed equal opportunity to demonstrate their ability.

If the American people are driven to action by collective necessity what will they do and how do you know they will do that? G. A.

We don't know what the people will do. That's just the trouble. If we did know for sure it would either be useless to state the social and war problem, or unnecessary. If we knew they

were going to kick over the apple cart and commit mass hari-kiri there wouldn't be any sense in wasting our time. We'd be out looking for a safe spot. If we were sure they would adopt Total Conscription it would be unnecessary to talk about it. Technocracy is an educational movement, not an organization of prophets. There is a big job to do. Why not pitch in and help?

Just how do you figure that Total Conscription will guarantee the future of America? E.F.

By eliminating the threat of fascism from without and the danger of fascism from within. With the threat of fascism removed social change can then proceed in an orderly manner. This will enable us to cope with the

One day a doctor, an engineer and a politician were arguing which of their professions was the oldest. The doctor said: 'Mine is the oldest profession because the Bible records that Eve was created from one of Adam's ribs. That was a surgical operation.' 'You're behind the times,' said the engineer, 'my profession is much older. In the Book of Genesis it says that order was brought out of chaos. That was an engineering achievement.'

'Just a minute,' exclaimed the politician. 'I have the edge on both of you. The doctor may have performed the first operation and my

problems of the postwar period more effectually.

Price System methods failed to solve the problems of the long depression. Now we are waging total war with Price System methods. Victory will come in spite of their use and not because of them. It will come because of the sacrifices of our soldiers at the front and the efficiency of our technology at home. Then after the war we will come face to face with the perilous post-war period with nothing but Price System methods to lean upon. That sort of outlook is very dismal, indeed.

Total Conscription will dispense with Price System methods for the duration. That's how it will guarantee the future of America.

Note To Our Readers

Send in your questions we'll do our best to answer them.

friend, the engineer, may have brought order out of chaos. But who do you think created that chaos?'

Describing the results of bombing on modern industrial cities in this war an editorial in the *Chicago Daily News* for June 4, 1943 states '... this is a civilization dominated more by the second law of thermodynamics than by the arithmetical laws of interest.' For an explanation of this physical law consult *Technocracy Study Course Book*, pages 39 to 50, also Introduction to Technocracy page 5.

MONKEYS AIN'T SO DUMB!

Three monkeys sat in a cocoanut tree,
Discussing things as they're said to be;
Said one to the others, Now, listen, you two,
There's a certain rumor that can't be true
That man descended from our noble race.
The very idea. It's a bare disgrace.
No monkey ever deserted his wife,
And you've never known a mother monk
To leave the babies with others to bunk,
Or pass them from one to another,
Till they scarcely know who is their mother.
And another thing: You'll never see
A monk build a fence 'round a cocoanut
tree,

And let the cocoanuts go to waste,
Forbidding all others a taste.
Why, if I put a fence around this tree,
Starvation would force you to steal from
me!

Here's another thing a monk won't do:
Go out at night and get on a stew,
Or use a gun, or club, or knife,
To take some other monkey's life.
Yes, man descended, the ornery cuss,
But, brothers, he didn't descend from us.

—From *Desert Salute*

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'When everybody is working it is not hard to be a statesman.' Samuel Grafton, *Chicago Sun* 12/18/43.

'Whether in cities or on the land, the millions of restless unemployed Americans challenge us to do something constructive to meet the problem they represent. It is a problem that lies at the very root of all our world troubles. For we are in a world revolution. We are passing from our age-old era of scarcity to an era of abundance made available to us by our marvelous scientific achievements in the field of production. The conflict in the world today both within our nation and without, is man's struggle for mastery of his own machines. These unemployed people in the cities and on the land are crumbs of the machine—of modern large-scale production. They are what they are because our generation has not learned to live with abundance, and until mankind has learned how to do this, we shall have unemployment, distress, revolution, and WAR.'

R. M. Evans, U.S.,

Dept. of Agriculture,
Washington conference
in July, 1941.

Private business persisted in selling materials of war to Japan. First quarter of 1941, U. S. sent Japan 8,314,000 pounds of lead; 1,097,000 barrels of gasoline; also copper and machinery, in some cases tripling the exports of the same period in 1940. This was good business.

'It may be that in its widest sense, on its material side history is the story of mans increasing ability to control energy.' James Fairgrieve, in *Geography and World Power*, 1915.

TECHNOCRACY

WHAT?

WHERE?

WHEN?

WHO?

WHAT?

★ Technocracy is the only American social movement with an American program which has become widespread in America. It has no affiliation with any other organization, group or association either in America or elsewhere.

★ The basic unit of Technocracy is the chartered Section consisting of a minimum of 25 members and running up to several hundred.

★ It is not a commercial organization or a political party; it has no financial subsidy or endowment and has no debts. Technocracy is supported entirely by the dues and donations of its own members. The widespread membership activities of Technocracy are performed voluntarily; no royalties, commissions or bonuses are paid, and only a small full-time staff receives subsistence allowances. The annual dues are \$6.00 which are paid by the member to his local Section.

★ Members wear the chromium and vermillion insignia of Technocracy—the Monad, an ancient generic symbol signifying balance.

WHERE?

★ There are units and members of Technocracy in almost every State, and in addition there are members in Alaska, Hawaii, Panama, Puerto Rico and in numerous other places with the Armed Forces.

★ Members of Technocracy are glad to travel many miles to discuss Technocracy's Victory Program with any interested people and Continental Headquarters will be pleased to inform anyone of the location of the nearest Technocracy unit.

WHEN?

★ Technocracy originated in the winter of 1918-1919 when Howard Scott formed a group of scientists, engineers and economists that became known in 1920 as the Technical Alliance—a research organization. In 1930 the group was first known as Technocracy. In 1933 it was incorporated under the laws of the State of New York as a non-profit, non-political, non-sectarian membership organization. In 1934, Howard Scott, Director-in-Chief, made his first Continental lecture tour which laid the foundations of the present nation-wide membership organization. Since 1934 Technocracy has grown steadily without any spectacular spurts, revivals, collapses or rebirths. This is in spite of the fact that the press has generally 'held the lid' on Technocracy, until early in 1942 when it made the tremendous 'discovery' that Technocracy had been reborn suddenly full-fledged with all its members, headquarters, etc., in full swing!

WHO?

★ Technocracy was built in America by Americans. It is composed of American citizens of all walks of life. Technocracy's membership is a composite of all the occupations, economic levels, races and religions which make up this country. Membership is open only to American citizens. Aliens, Asiatics and politicians are not eligible. (By politicians is meant those holding elective political office or active office in any political party.)

★ Doctor, lawyer, storekeeper, farmer, mechanic, teacher, preacher or housewife—as long as you are a patriotic American—you are welcome in Technocracy.

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Chicago 6, Illinois**

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1. Halt minority group pressures on the government
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4. Oblige equality of sacrifice on the home front
5. Liquidate pro-fascism in America
6. Prevent the conscription of labor alone
7. Reach our highest industrial efficiency for war
8. Make the creation of further debt impossible
9. Preserve America's dwindling natural resources
10. Provide a high standard of living for all
11. Install technological controls for technological war
12. Underwrite the perilous post-war period ahead
13. Guarantee the greater future of America

Here is a baker's dozen of fundamental necessities for Total Conscription. This design is now called for by the trend of events. Yesterday is gone—today is rapidly slipping by—Tomorrow never comes.

Put on your thinking caps, Mr. and Mrs. American.

INVESTIGATE TECHNOCRACY

GREAT LAKES TECHNOCRAT

25c

July-Aug-1945
Volume III

Number 5

25c

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Peace and Abundance or Chaos and Scarcity

North America approaches the postwar period. Every citizen is anxious about the near future. Business men, economists, politicians and star gazers are prophesying daily. These medicine men of the status quo run the scale from calamity to prosperity forever. Each group is blowing its own horn. Confusion compounds upon confusion. The public is in a daze trying to make sense out of this mass of misinformation.

This article is nobody's postwar ballyhoo. It is the little known story of the real forces behind civilization. These powers determined how our forefathers lived in the past. They govern our lives today. They are dictating what must be done in the postwar era, if most of us are to live at all. If you want to know what makes the real noise behind all the phony horn blowing going on, here is the answer. Don't miss this article.

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TECHNOCRACY DIGEST

625 W. Pender Street

Vancouver, B. C., Canada

Which Way North America?

Peace and Abundance or Chaos and Scarcity?

By The Peripatetic Technocrat

In the past all civilizations followed the same path of social progression. This was a handicraft agrarian way with ever present natural scarcity. From this base evolved a related, controlling superstructure of business, politics and ecclesiasticism. Despite all the trumpeting of history, human society was static for thousands of years. Then came the industrial revolution.

With this fundamental alteration in the base of society, a totally new path of social progression appeared. This is the technological path. It is opposite and opposed to the old path. For the last 169 years North America has been following both paths of social progression simultaneously. In addition it has developed further along the technological path than any other continental area.

Let's trace both paths of social progression. First, let's look into the genesis and nature of each path. Then we'll examine the record of what they are doing today. Finally, we'll project them into the future by stating their own proposals for the postwar era. In this way we can find an answer to our question: 'Which Way America?'

THE OLD PATH OF SOCIAL PROGRESSION

The First Sap Was Homo

ANTHROPOLOGISTS and historians tell us that mankind lived in trees and caves for a long time. If this is correct, they had plenty of opportunity to observe the behavior of the other wild life around them. They must have noted that it was a system wherein the strong preyed on the weak. It was a case of eat or be eaten, kill or be killed.

Early man did not survive in this environment by obeying these rules. He was always too puny to compete with the carnivora on a physical basis.

But he did survive by a combination of hiding from, running away from, and outwitting his natural enemies.

After awhile the pressure of his environment forced a defensive idea into his primitive 'mind.' He came together in social groups. The purpose behind this was to multiply his individual strength against the opposing forces of his environment by adding to it the strength of many others of his own kind. Thus it was possible to obtain for himself greater individual security. This social movement of early man was the first demonstration of collective intelligence ever recorded.

Shortly after that some forgotten louse discovered the principle of the relation between value and scarcity. That was the beginning of the Price System. Soon the 'smarter' individuals learned how to apply this principle so as to gain a preferential advantage over other individuals in the social group. From there it was just a step to the invention of money, interest, debt, profit, delayed exchanges and the whole caboodle of characteristics that have marked the Price System down through the ages.

Social Sabotage Began With Price

The foundation of the Price System is rooted in scarcity, value and money. From this springs its three cardinal rules: Buy low, sell high, always keep things scarce. We might define a Price System as follows:

Any social system whatsoever that combines the relation between value and scarcity with the use of money into a system of trade and commerce for the purpose of buying and selling for a profit is a Price System.

As time went on the Price System developed, became more refined and spread all over the world. It is the only system of trade and commerce ever known. The more refined and developed it becomes, however, the more it remains the same. The same old three cardinal rules are still valid: Buy low, sell high and for God's sake, keep things scarce. That's the secret behind 'want in the midst of plenty.' That's the motive behind the anti-social phenomena of buried patents, high prices, restricted production,

monopoly controls and international cartels. They exist in obedience to the cardinal rules of the Price System.

A point to note becomes evident now. The rise of the Price System in primitive social life perverted the original purpose man had in mind when he first came together in social groups. It set man against man individually and as groups. It prostituted his collective intelligence and security to individual chicanery. Man reverted to the law of the jungle. He actually translated the system of the strong preying on the weak, eat or be eaten, kill or be killed, into human laws and institutions.

Every Price System is organized to exchange goods and services for a profit. Any distribution that may result therefrom is purely accidental and incidental to the main purpose at hand. It must never be permitted to become too great lest it endanger scarcity. The primary function of business is to exploit the natural resources of any area and its people for all the profit the traffic can bear. From this nature of the Price System springs the entire collection of ethics, morals and behavior patterns that constitute modern civilization.

This is not a moral indictment of the Price System but a factual analysis. The Price System is the only type of social system that could have operated under the conditions of natural scarcity that existed in the past. It is futile to guess what form primitive social life might have taken if the Price System hadn't developed out of it. The point is that the con-

cept of price, which subverted the original purposes of social life, rested upon a physical factor of early man's environment. That was natural scarcity. This is what validated the Price System then and what validates it now wherever a natural scarcity exists. In North America, natural scarcity went out of the picture about a generation ago. The Price System has been an invalid imposition here ever since then.

Aladdin Had No Lamp Then

In the past man's ability to produce goods and services was always geared down to the power output of the human body, plus the number of workers available. He had no machines or technology to speak of. Consequently, he never could produce enough to give every one a sufficiency. There was always an ever present natural scarcity.

Since scarcity has value, it can be bought, sold, exchanged and manipulated. A social system with its rules reflecting these characteristics was

bound to arise out of such conditions. An equitable division of the existing scarcity would never have provided a sufficiency for all at any time in the past. This is what validated the Price System.

Since it is a mercantile form of civilization, mercantile ethics prevail. The highest rewards are given to those who can outbuy, outsell, out-exchange and out-manipulate their competitors. This puts a premium upon the exercise of the lowest instincts of the human being. These might be listed as the mercenary instinct and the instinct to lie, cheat, chisel, steal and worse. In fact, it is plain that the operating rules of the Price System are the lowest common denominator of the abilities, intelligence and necessities of mankind.

This is a brief record of the genesis and nature of the old path of social progression. All North Americans still lead their precarious existences under the tyrannical restrictions and regimentations of this old path today.

THE NEW PATH OF SOCIAL PROGRESSION

'Like Water, Willy Nilly Flowing'

Setting an arbitrary date as the beginning of the industrial revolution is like setting a date when a youth leaves his boyhood behind and enters into manhood. It is a process of growth. For thousands of years under the old path of social progression there was a slow growth of scientific

knowledge. Who first conquered fire? Who first learned how to smelt iron ore? Who discovered the principles of the lever, the inclined plane, the wedge, the pulley and the wheel? It's not important to know this. What is important is the fact that scientific knowledge is the common property of all mankind.

For the first 200 years of white settlement in North America, the old path of social progression held exclusive sway. Then in 1776 James Watt invented the first single acting steam engine. With this high point in history the new technological path opened up. Since then North America has been following both paths but with increasing incompatibility all the time. We have progressed so far along this new path that now America is in a physical environment totally different from that of our founding fathers. Let's examine the evidence.

In 1790 about 90 percent of the people lived on farms. It required the surplus products of 19 farmers to feed one city person. In 1945 less than 20 percent of the population (U. S.) live on farms. The surplus products of 19 farmers will feed 56 city persons, and there will be enough left over for 10 more in export trade.

In 1944 more than twice as much freight (ton-miles) was hauled as in 1919, with 600,000 less railroad workers employed.

In 1944 more than 40,000,000 more tons of coal were mined than in 1918, with 200,000 less coal miners employed.

In 1939 about 10,000 less steel workers than were on the job in 1919 produced over 15,000,000 more tons of steel.

In 1920 U.S. produced 20,000,000,000 kilowatt-hours of electricity; in 1940 production was 144,000,000,000; in 1944 it reached 244,000,000,000. The curve of power production zoomed upward for 24 years. Not so with the curve of employment in power production. The all-time peak was reached in 1930 with 298,000 workers employed. By 1943 this had declined to 240,000.

What do these examples add up to? Simply that there is a dual force propelling North America along the new path of technological social progression. This dual force is energy and technology. By energy we mean that type of energy derived from sources outside the human body, such as is obtained from coal, oil, gas, wind and falling water. This is known as extraneous energy. Technology is the application of physical laws to industrial production by means of inventions, processes and new mechanisms.

The extent to which extraneous energy has displaced human energy in the last 169 years is clearly illustrated by the studies of Dr. C. R. Daugherty and Water Supply Paper No. 579 U. S. Geological Survey. This consists of an analysis of the power used in factories (U.S.) between 1849 and 1929:

1849—72% human

“ —21½% mechanical

“ —6½% work animals

1929— 4.8% human

“ —94.0% mechanical

“ — 1.2% work animals

It will be seen that human energy as a source of motive power was almost completely eliminated in this 80 year period.

The best illustration of the extent to which technology has grown resides in the records of the Patent Office. In the decade between 1790-1800, only 268 patents were issued; between 1830-1840, 5641 patents were issued; but between 1930-1940 a grand total of 485,285 patents were granted. There are many other examples of this trend. Yes, energy and technology are propelling America along the new path of social progression willy nilly.

Do As the Jones' Do

The first lesson we observe along America's new pathway is that the way to produce more is to apply more energy and technology and less toil. America's productive ability is not geared down today, as was the case in the past, by the power output of the human body plus the number of workers available. The only thing gearing it down now is the controlling superstructure of business, politics and ecclesiasticism. This triple oligarchy is obstructing the highway along which America's greater destiny lies.

During the period of our development along this new path of social progression, the aforementioned controlling superstructure remained unchanged. Despite the fact that North America has moved into a new physical environment, it is still subject to the ancient operating rules of the old

path of social progression.

As a people, we have followed both paths at the same time with growing incompatibility and frequent separations, each one more serious than the one before. These took the form of panics and depressions. In 1929 there was a violent parting of the ways. For a while, it looked as if North America would desert the old path for good. But the beneficence of Government brought them both together again. This was accomplished by bribing various minority pressure groups, by destroying the surplus, and by sundry park building and leaf raking projects and the like, not to mention outright charity.

But not a single social problem was solved. Everything was postponed. We muddled along from bad to worse. Then came the second world war, just in the nick of time. Since then a sizeable proportion of the population on the home front has been swimming up to its ears in prosperity. Still nothing has been solved. The danger of foreign aggression has been removed. But the causes which brought about the frequent conflicts between the two paths of social progression in North America have only been intensified.

Besides setting up intolerable tensions between our industrial and social structure, these dual social paths have done something else to us as a people. They have set up a dual set of behavior patterns in all North American citizens. We are a people cursed with a clashing heredity.

For 8 hours a day the working per-

son is a citizen of a technological civilization, functioning according to the requirements of his job. For the other 16 hours, he is an opinionated ignoramus, spouting ideas that died of old age 200 years ago. The average man is constantly trying to interpret the future in terms of the past alone. It can't be done! The future can only be interpreted in terms of the past and present combined.

'I Hear You Calling Me'

The voice of the Price System is always with us. We can't escape it this side of the grave. It has 7,000 years of accumulated propaganda on tap at all times. This tripe is calculated to condition us into acquiescence towards the status quo.

The Voice of Technology has been mute up-to-date. But now it is beginning to be heard in the land. It speaks with greater and greater effect. It says that North America must abandon the old path of social progression or perish. It says that America's destiny lies on the new technological path. Why?

North America has about two-thirds of the world's installed horsepower of machinery. It has two-thirds of the world's graduate engineers. It has the lion's share of the world's known natural resources. It has by far the largest body of technicians and skilled personnel. It has by far the greatest

industrial plant and equipment. It has what the slick paper trade and technical publications love to call the greatest industrial 'know-how.' It has almost one-fifth of the world's land area. But it is burdened with less than 10 percent of the world's population.

No matter how many times or in what way you try to figure this up, it always comes out the same. It always adds up to the stubborn fact that North America's economy is an engineering civilization. It requires engineering methods to operate it properly. Price System methods can't do it. They can only muddle around with it and make our collective social problems worse.

North America has moved into the third stage of the industrial revolution, the Power Age. The rest of the world is still in the first or second stage. We have reached a condition of potential abundance. But we are still trying to operate with methods of scarcity. We are trying to buy and sell abundance. It can't be done. Abundance has no exchange value. We are trying to operate an engineering civilization with anti-engineering methods. It's no wonder we have social confusions, social problems and growing individual maladjustments and psychological complexes. The only wonder is that it isn't worse.

TECHNOCRACY STUDIES BOTH PATHS

Under the Microscope

Now that we have outlined the rise

of both paths of social progression and described their essential charac-

teristics and brought them up-to-date, let's examine the record of what they are doing today. But, first, a few words about Technocracy.

Technocracy is not a foreignism orology. It is not a struggle of one class against another. It is not a sect of any kind, nor a political party, nor a pressure group. It is an engineering analysis and synthesis for an engineering civilization. It is not necessary, however, to be an engineer to understand Technocracy. Being an engineering study of social problems, it is, in effect, the social aspect of all science. By social aspect is meant merely the manner in which energy, technology and science in general affect our individual lives, and the manner in which their development has created new social problems unknown before.

The Body of Thought of Technocracy, as a whole, is as big as all science, since science affects modern society at every point. Since Technocracy interprets this impact in terms of the general welfare of all, one might call Technocracy the science of society. It is a new body of thought. Consequently, it is not readily accepted by the status quo, which is under the domination of the old path of social progression. Any sane North American, however, with average intelligence can readily understand the main ideas of Technocracy.

The abstruse, technical details, of course, can be understood only by persons with technical training. That is true in all fields of modern science.

However, there are enough technicians and engineers in Technocracy who understand it thoroughly so that the non-technically trained need not worry about being hoodwinked. As a general rule, any scientifically trained person loves nothing better than to discover flaws and expose errors in any project pretending to be scientific. The main point for all North Americans is that Technocracy is a fresh, new approach to social problems; and that it, and it alone, has the correct solution to those problems.

Who Are the Fascists?

America has been at war with foreign aggression for over three years. We are supposed to be fighting fascism. Well, Technocracy has been fighting against fascism ever since the date of its incorporation over eleven years ago. In *A-2 Technocracy* magazine published in July, 1935, William Knight traced the rise of European fascism and exposed the basic forces behind it. In October, 1935, in *A-5* of the same magazine, Howard Scott protested against the shipment of scrap iron to Japan. He pointed out that we had 'given them something to remember us by.' He wrote that 'someday this material will come back to us done up in Japanese wrappers.'

It has been coming back at us for over three years now. Some of it in the bodies of dead and wounded American soldiers. A spectroscopic analysis was made recently of scrap iron from Japanese munitions. The analysis was made by the Battelle

Memorial Institute of Columbus, Ohio, which Institute is the largest independent industrial research laboratory in America. The scrap iron, some of it taken from the bodies of our own boys, was pronounced to be American scrap iron. Between 1933 and 1940 American private (free) enterprise sold 10,000,000 tons of scrap to the Japs. This was smart business, but stinking patriotism.

In 1938 in A-16 Technocracy pointed out that 'technology was moving onto the field of military warfare with giant strides.' This was a year before the war broke out in Europe. Technocracy called for a two-ocean navy, a two-ocean air force, a larger army and the introduction of technological methods into the Armed Forces.

All during 1940-1941, when the U. S. was lousy with pro-fascist and isolationist groups all seeking to sabotage America's defense, Technocracy did everything it could to assist our preparations for war. Sections of Technocracy from coast to coast donated the use of their Section Headquarters for Red Cross classes, OCD classes and even for draft board induction centers.

The Mobile Sound Cars of Technocracy were donated for outdoor training classes and programs. Technocracy's Grey Fleet of passenger cars (which, like the Mobile Sound Units are individually owned and paid for by members) was and still is used in paper drives, bond drives and community efforts of all kinds calculated to enhance the war effort.

There's Only One Best Way

In July, 1940, 18 months before the Japanese bombed Pearl Harbor, Technocracy published the first draft of its program of Total Conscription. There were two objects in view. The first was to unify the entire American economy on the home front, as well as on the battle fronts, for the one single function of waging war at the lowest possible cost in lives and resources.

The program would enroll all citizens in National Service and eliminate pro-fascism on the home front. This would be accomplished by setting up two parallel forces: An Armed Force and a Civilian Home Front Force. All citizens, all wealth, all facilities would then be conscripted into National Service. One for all and all for one! These two citizen forces would be on the same and equal basis of pay, health, food, housing, security and duty toward the common motherland.

The secondary purpose of Total Conscription is to provide a transition vehicle into the postwar period, with the minimum social confusion all around. The war in Europe is over. It has been won at the high cost of Price System policies of operation. Behind the stumble bum methods of these policies was always the Great Technology of America, more than making up for their inefficiency. Applying that technology on the battlefield were the technically adept American boys.

How could we possibly have lost

with a combination like that? But, there is still the Asiatic war to win. And after that, there is the peace to win. And after that comes the post-war period. *Fortune Magazine* in December, 1943, said:

For such is the paradoxical character of our economy that when the Germans and Japanese cease to try to kill us, it will be harder for most of us to keep alive than it is at present.

That is stating the case concisely and clearly. Technocracy's program of Total Conscription, or its equivalent, becomes more necessary every month. The closer we draw to the postwar period, the closer America approaches to social chaos. Nowhere on this great Continent, from the Arctic Zone to the Panama Canal, is there any proposal that even faintly resembles an overall design of social operations, except Total Conscription.

TECHNOLOGICAL PATH TODAY

Milo and the Bull

Now we can resume our inquiry along the two paths of social progression. Let's first see what the new technological path is doing today. In the last four years the U. S. has expanded its technology more than in the previous forty. Canada's manufacturing facilities have expanded more in the last 5 years than in the previous 25 years. The U. S. Government now owns over 1,000 new industrial plants, equipped with the best machinery and tools available. These have been estimated to comprise at least 25 percent of our entire industrial capacity to produce.

These plants and facilities cost the U. S. Government \$53,000,000,000. U. S. also has over \$100,000,000,000 in surplus goods of all kinds. The Canadian government has invested almost \$1,000,000,000 in new plants and owns about \$4,000,000,000 of surplus goods. Where did the respec-

tive governments get the money with which to buy these facilities? Answer, they sold bonds to the people and taxed them heavily. Since the money came from the people and the people own their governments, the plants belong to the people.

The great advances America has made along the new technological path of social progression is evidenced by one tremendous fact. The biggest war in all history has always been too small for the great capacity of technology today. The peak of industrial production was reached in U. S. and Canada in November, 1943.

In September, 1943, the U. S. railroad system was operating at only 63 percent of its freight haulage capacity, and at only 48 percent of its passenger haulage capacity. Electric power production was only 46 percent of capacity for the whole year of 1943 and bituminous coal production 72 percent. To cap the evidence

250 of the largest war contractors, holding over two-thirds of all the prime war contracts, themselves testified in a survey that only 16 percent of them were operating at full capacity in September, 1943. This was defined as two shifts per day.

The load factor in industrial production is the difference between full capacity, potential and actual output. Full capacity is defined as full operation of all facilities 24 hours a day, 365 days in the year. Actual output, subtracted from full potential, is the load factor of operations. It probably never rose much over 30 percent in American industry as a whole even at the peak of production.

It might be argued that a higher load factor was limited by the shortage of manpower. The answer is that production is not geared down to the number of workers available but to the extent to which technology and automatic operations are applied. This is the Power Age, not the handicraft-agrarian age!

'Don't Fence ME In'

North America has demonstrated its capacity to flood the entire world with material for war on part-time industrial operations. If it can do it for war, it can do it for peacetime civilian consumption. Let them find an answer to that! The Voice of the Price System says that these new government owned plants can't be used for civilian production. That is the propaganda of scarcity. You can read it in practically every Price System publication.

The Voice of Technology says that these new plants and facilities can be used for civilian production. Let's listen to three outstanding examples of the Voice of Technology. Mr. A. B. Einig, President of the American Machine Tool Distributor's Association, said at a meeting of the Association's Executive Committee in Chicago on April 18, 1945, that 'nearly 95 percent of the one million machine tools made since Pearl Harbor can be used in civilian production.' He ought to know what he's talking about. Machine tools are his business.

Some time back, before his nomination for the vice-presidency, Harry S. Truman, as Chairman of the Senate War Investigation Committee, stated in a report:

We have the factories, the tools and labor supply. During the war we have vastly increased our facilities to produce raw materials. New processes for fabricating them have been developed. Any assumption that these plants cannot be used is as baseless as the contention made in 1941 that our automobile plants could not be used to produce war materials.

Last, we present the view of our late, great President Franklin Delano Roosevelt. He wrote a letter to O. Max Gardner, Chairman of the Advisory Board of the Office of War Mobilization and Reconversion, just five days before he died. In that letter was the following statement: 'Victory, without the use for abund-

ance of the powers we have developed in production for war, would be, indeed, a hollow victory.'

This is a brief picture of what the new technological path of social progression is doing today. It has built the most gigantic and efficient physical plant for producing goods and services ever seen under this sun.

It is winning a global, technological war on part-time operations. It has brought into being the means to produce and distribute abundance, leisure, security and equal opportunity to all citizens. Now, let's see what the old Price System path of social progression has been doing these last few years.

THE OLD PRICE SYSTEM PATH TODAY

Into the Mouth of Hell

One would think that after 169 years of extra special freedom for 'free enterprise' that it would be able to show substantial social benefactions accruing therefrom. Let's examine the record. First, what has 'free enterprise' done with America's natural resources?

Today, five-sixths of America's original forests (U. S.) are gone. They have been cut down and not replanted. The annual cut and waste of timber resources has been exceeding the annual growth for 40 years. In 1943 the excess was 50 percent.

Twenty percent of our original cropland has been ruined for any further cultivation. Another 30 percent is badly damaged. Every year the nation is ravaged by floods. If it isn't one river, it's another. And what do we do about it? Nothing! Nothing at all. Oh, yes! Pardon us, we do do something about it. We build dykes along the rivers to confine the raging waters so as to hurry them down toward the oceans, carry-

ing in their muddy bosoms America's Number One natural resource, the land. Every year a billion tons of soil is washed into the oceans. One-third of America's top soil has been lost in the last few hundred years. That's how the Price System solves social problems.

Our most productive mining districts are nearing exhaustion. High grade iron, copper and zinc ore are getting low. We are now stockpiling all three of these metals from Central America. Over 11,000 tons of steel were wasted in the manufacture of inferior razor blades alone in 1944. The same amount of steel, with a slight change in the metallurgical content, would make enough lifetime blades to satisfy the demand of most of the adult male population for many years. But, anything goes if there's a profit in it. Ten thousand bazzaiz for good, old 'free enterprise.'

Every one knows that fire is man's best friend (next to his dog) and his worst enemy. But few people

know the extent of property damage wrought by fires every year in the good old U. S. A. In 1944 it ran \$800 per minute, night and day, week after week, from one year's end to the other. In Chicago alone there was a fire every 15 minutes in the first 90 days of 1945. Considering the Jerry-built homes that most Americans have been sold into by private enterprise, it is a wonder the whole nation doesn't burn down. Again, we can thank technology, plus the brave fire laddies who stand on guard night and day. But there's still hope. We may get a hot, dry, windy season. Remember the Chicago Fire?

'Unto One of the Least of These'

What has the old Price System path of social progression accomplished in regard to America's human resources in the last 169 years? Again, let's examine the evidence.

Today, such a thing as a public health system is non-existent in North America. We have always had a situation wherein the various schools of the healing art compete fiercely for the business of the sick, the while they denounce each other at every opportunity. One of the results of this freedom to chisel profits out of the sick is that about 80 percent of the American people are wholly without systematic health care. The draft records revealed that 40 percent of our young men were physically unfit for military duty.

Our educational system is so inadequate that a recent survey showed that out of every 40 adults only 14

got through grade school; 6 managed to squeeze through high school; and only 2 had the dubious privilege of going through college. There are from 3 to 10 million illiterates in the U. S., ranging from those who can neither read nor write to others who cannot understand a written order. In 1944 we permitted one million fewer boys and girls to enter high school than in 1940. The President of Grinnell College claims that 50 percent of Americans are occupational misfits and that most men at the age of 40 are still looking for a job with a future in it. Some school system!

Only Saps Work

Our crime record is the world's best. In 1944 we committed a major crime every two minutes, all year long. Figure the total yourself, or send for a copy of the Uniform Crime Report for 1944. Over 95 percent of all crimes listed were crimes against property. The Treasury Department is asking for 10,000 additional agents to help catch tax dogers. It complains that tax dodging is running around \$4,000,000,000 every year. Currency in circulation five years ago was only \$7,600,000,000. At the end of May, 1945, it was \$26,500,000,000. About \$8,000,000,000 of this is in big bills. These are handy for cash deals that are difficult to trace. Ergo, black markets in meat, food, gasoline or what have you, are swamping the entire economy. It sure is handy the way one muddle fits in with another. In fact,

it's so convenient for the chiselers that the chaos seems to be organized.

When Do We Stop Eating?

Then there is the little matter of the food shortage. It certainly is getting harder and harder to get a decent meal. One can read statistics about it in every paper. What do the men think who are in the business of buying and selling food, the food brokers? The National Food Broker's Association held a conference at the Stevens Hotel in Chicago on April 7, 1945. The President of the Association issued a statement to the press to the effect that it was common knowledge in the food brokerage business that every food warehouse in the U. S. was jammed with food, much of it spoiling, and that many storage facilities were being used for food that had not been used for that purpose before the war.

The WFA issued a census of livestock on American farms at the end of 1944. It adds up to 1½ sheep, 2 pigs, 2 head of cattle, 1 turkey, over 20 chickens and Lord knows how many dozens of eggs for every family in the U. S. This food, however, is not getting to the people. Unless you happen to be one of the lucky 2,000,000 citizens who owns the rental on a frozen food locker, or unless the butcher is one of your best friends, there are only two ways left to get any meat. Battle it out with the other John Q. Citizens in the stores, or patronize the black market. 'My, what big teeth you have, Grandma.'

'He Took His Farewell Trip Into That Promised Land'

The latest report of the Interstate Commerce Commission reveals that there was more than one collision every two hours and more than one derailment every hour on American railroads (U. S.) in 1944. The grand total of railroad accidents was 16,258 in which almost 500 people were killed and over 3,000 injured. Why, I don't believe it! I never saw that in my paper. You're right, brother, you didn't. The chances are you will be an old stiff with a nine foot beard before the average paper gets up journalistic guts enough to expose this situation.

The Interstate Commerce Commission has been exposing it for decades in its periodic reports. This august commission has investigated countless railroad wrecks since it was first set up in 1887. Before this present generation was born, it had come to the conclusion that most railroad accidents were preventable by proper design. It repeatedly called attention to the fact that the greatest single preventative of wrecks was the block signal system. It wheedled and begged the railroads to install this safety device for many years. But, no soap.

Today, out of a total of 167,000 miles of passenger road in U. S. over 50,000 miles have no sign of a block signal system. Only 8,000 miles of the total have automatic train control. And, when was the block signal system invented? So

help us, Hannah, *IT WAS IN 1842*. This is the record after *103 YEARS* of control of our railroads by 'Moguls and Empire Builders.' Big shots, my eye! Big something else! That's the Price System for you!

'Paper Will Win the War'

Is there a paper shortage? Yes, there is, for John Q. Citizen and his family. He is made aware of it periodically when a paper drive is on. He is exhorted on the air and in the 'free press' to save paper. Many stores display signs saying: 'Bring your own paper bags.' School boys are stimulated to wander up and down alleys pulling their little play-wagons to gather paper. A big drive is put on with all the power and pressure of modern propaganda. The boy who gathers and turns in the most old paper is declared a champion. There is a grand finale to the drive. A big meeting is held in some school. The politicians are all there, and the reporters too, of course. That's why the politicians are there. Much hot air is belched forth. Pictures of the champion paper picker-upper are taken. These somehow always include the politicians. There is a grand slam in all the papers to wind it up. Then everybody proceeds to try to forget about the paper shortage until some businessman or politician sets off the alarm again. Then we repeat the performance.

Yes, there is a paper shortage for the great majority. There is no paper shortage for business, though. In 1943 American business (U. S.)

spent \$2,000,000,000 for advertising. It used 1,000,000 tons of scarce paper for this purpose. In addition, 700,000,000 ton-miles of various kinds of transportation were diverted from the war effort to haul this drivel around. The volume of advertising in mid-1944 was running 40 percent above the 1935-1939 level. In 1944 over \$2,000,000,000 was spent for advertising also. Paper consumption for each of the last three years has been double the 1932 consumption.

'Free Enterprise' is doing its all-out darndest (at the expense of our natural resources) to win the war for Uncle Sam with advertising. What actually is winning the war is the Great Technology of America and the men and women at the front who are applying it. Business has been enjoying a glorious ride on the plush-lined cost-plus whatever-you-can-grab coat-tails of technology ever since Pearl Harbor. That's nothing new, however. They have occupied that favored spot for 169 years.

Pass the Gravy, Please

You've got to give business credit. It has prospered greatly during this war. In the first World War, we created 22,000 new millionaires. We don't know what the score will be for this war. The game is still on. But we do know that net corporate profits after taxes were higher in 1944 than in 1943 which, in turn, was 10 percent over 1942. The Survey of Current Business said recently: 'It is possible that the estimates, especially for 1944, are still too low.'

In the midst of all this war prosperity for 'free enterprise' the Division of Research of the OPA reported on June 27, 1942, in *Estimates of the Distribution of Consumer Income in the U. S.*, that 65.7 percent of American families still got less than \$2,500 a year. Since the peak of production and employment were reached toward the end of 1943, it is likely that this low average went up a little. However, employment has declined over a million since then, and is dropping fast. So, we're probably not far from the June, 1942, estimate now. It will drop lower, much lower.

This is a partial record of the old Price System path of social progression today. Incomes for a small minority of the population are way up. Net corporate profit is way up. Crime is way up. Waste is way up. Accidents are way up. While education is way down. Public health is non-existent. Living standards for the great majority are still low. Insecurity and fear of the future stalks every citizen. Collective social morale sinks lower and lower all the time.

Yes, we are united on the home

front in the pursuit of personal profit and special privilege. If you have not been getting yours while the getting has been good these last few years, you have been just a plain, damn fool. Your best friend will be the first one to tell you. 'Get it while the getting's good, Joe; this prosperity isn't going to last forever.' That's the average attitude today. It has become practically a national byword.

This is the set of behavior patterns upon which the Price System places its highest premiums. These are the cultural orchids of a system of artificially enforced scarcity. This is the perfect fruit of the old path of social progression. In following this path, we are heading straight for a National and Continental social catastrophe of the greatest magnitude, in the postwar era.

If we fall into this hole, which we dug for ourselves, the only thing that can possibly save North America from a fascist chaos is Technocracy's Program of Total Conscription of Men, Machines, Materiel and Money, with National Service from All and Profits to None.

POSTWAR PARTING OF THE TWO PATHS

'You Take the Low Road'

In the postwar period ahead, North America will be forced to choose between the two paths of social progression. One road goes up and the

other goes down. As a people, we cannot muddle along much longer. We cannot continue to carry Price System practices on one shoulder and sanctimonious pretentions on the

other. As the going gets rougher along the old path, we will have to do one of three things. We will have to dump our sanctimonious pretensions, abandon our Price System practices, or discard both. If we refuse, there is only one way out, and that is down.

The low road leads to fascism, American style. If the past history of special privilege groups is any indication, this will be the world's worst brand of fascism. The high road leads to abundance, distribution, leisure, equal opportunity to all citizens and economic security from birth to death. One might lump these aspirations all together and call them physical democracy. This is the new path of technological social progression.

Most Americans do not know what fascism is. They think that if the top fascist stooges are caught and hung by the heels, the problem is solved. Fascism is more than that. It is a policy of social operations, wherein there is a reversion of civilization to a lower order. It is a counter-revolution against the advance of science by the forces of reaction. It is an effort to freeze the production of goods and services by human toil and hand tools. The purpose of this is to escape from the threat of abundance and thus maintain scarcity for the great majority with special privileges for the favored few.

This is an effort to avoid the necessity to solve social problems and to preserve a dying economic order by force. Lastly, fascism is compulsion in race, religion and economics. We

have seen the pattern in Europe these last few years. Essentially, fascism is a conspiracy against the necessity for social change. There are three major forces involved: Corporate enterprise, that is, free enterprise in general; the political state; and those reactionary political, economic and educational pressure groups masquerading as spiritual institutions, i.e., ecclesiasticism or clericalism.

Social problems are more complex and acute in North America than in any other Continental area. This is because our technological development is greater here and our social development more laggardly. These opposing forces, one pulling forward and one holding back, have set up tensions in the social structure. As the process develops, the tensions become greater. There is a breaking down point somewhere, since these are physical forces operating in the social mechanism.

As a result of this growing tension, the pressure for social change is greater in North America than in any other area. A second resultant of this is that the danger of fascism is greater here than in any other area. We must remember that European and Asiatic fascism were largely financed and supplied by corporate enterprise, and encouraged by the connivance of political states and clerical hierarchies in the United States, Canada, England and France. Defeating fascism abroad is only the beginning of the big job that faces America. We must defeat it at home or go down the low road to fascism and social chaos.

POSTWAR PROPOSALS OF THE OLD PATH

For Want of a Nail

As we proceed with the analysis of our problem, Which Way North America, we reach the point of postwar proposals. First, we'll take the Price System's proposals and see what they amount to. Well, Sir, it would take a regiment of freudian specialists to analyze all these dreams. The Price System has thousands of postwar plans. Every minority pressure group has a private plan of its own, i.e., for its own group. Each one of these plans can be neatly summed up as a conspiracy against all the other minority plans.

This is the nature of the Price System, because it sets man against man, individually and as groups. There is no sense in quarreling with any particular group because of its behavior. This is dictated by the operating rules of the Price System. Before any one is entitled to press a social indictment against any individual or group, he must come into court with clean hands. Nearly every individual and group in America is as black with social guilt as his, or its, opportunities have permitted. Consequently, they can be dealt with only objectively as factors in the whole problem.

In all this hog wallow of confusion about the postwar period, there is no unified, overall design of social operations anywhere. It's a snarling welter of dog-eat-dog behavior pat-

terns. But once we leave this fetid atmosphere and climb up to the cleaner air of science, it will be found. Technocracy's program of Total Conscription is not a minority pressure group plan for the postwar. It is a scientific blueprint of social operations. Technocracy is not a minority pressure group. It is dedicated to America as a whole. Technocracy is coming into court with clean hands. Now, let's look at some of the screwy ideas the Price System is proposing to deal with America's postwar problems.

Count Your Pennies, One by One

There is a school of economists which says that the people's savings assure postwar prosperity for a long time. With that for a head start, they say, if we then balance our economy at say \$150,000,000,000 a year everybody will live happily ever after. There are one or two little flaws in this pretty picture. First is the fact that 65.7 percent of the people have been getting less than \$2,500 a year right along. Not much of it has gone into savings. Second, is the fact that the great bulk of this savings, estimated to average \$1,200 per capita by the end of 1945, is in the hands of a small minority of the population. *Business Week* stated in its May 5, 1945, issue that less than 25 percent of the \$230,400,000,000 of government securities outstanding at the end of 1944 was in the hands of

individuals. The rest is held by banks, insurance companies and corporations.

It is not the billions that are hoarded that constitute purchasing power. It is, as Carl Sandburg has said, the nickels and dimes that are spent on the main stem for 'a handkerchief, a mouse trap, a bowl of soup.' Then, about the idea of balancing our economy. A Price System is based upon scarcity, value and money. It must expand or die, after technology enters the picture. Scarcity, value and money are all variable factors. The only thing that can balance them is a natural or artificially enforced repression of their variability.

In the past the first force operated. In the face of the potential abundance of the Power Age, the only method left is to artificially repress the abundance. That's fascism.

Maybe whichever school of economists gets the inside track to the politicians' ears will make a sincere effort to balance this Price System economy. Regardless of that, the Price System will have to obey its own three cardinal rules, buy low, sell high, and keep things scarce. Maybe the leopard can change his spots. Maybe, too, a jackass can turn itself into a Golden Palomino thoroughbred. But we're from Missouri!

Old Gent With the Whiskers

Another school says that lower taxes will do the trick. This doesn't mean lower taxes for John Q. Average man. Not at all. It means lower taxes for 'free enterprise.' Somebody

has to pay off the public debt, you know. They say that we owe it to ourselves. They say it's all in the family. Family or no family, the interest has to be paid. The debt has to be kept valid at all times. This spells taxes. So, naturally, the Sons of Mary are getting all set to once more unload their share of the burden upon the Sons of Martha. This has the same old familiar stink of the ages.

Then, again, 'free enterprise' says that if we would only get the government out of business and get more business into the government, everything will be rosy. Rosy for business, of course. Since 'free enterprise' conducted its successful strike in 1941 for cost plus as much as they could grab (while fascism was at our ramparts), it has been in the government up to its ears. If this idea goes far enough, a coalition of corporations would take over everything. That's fascism, too.

The Harpies Sing Again

Another school says foreign trade will create postwar prosperity. Let us not forget that while American technology (U. S.) has been greatly expanded in the last four years, other countries have not stood still. Canada is now the second exporting nation. Australia is rapidly becoming industrialized. Technology is surging forward in Russia, Brazil, India and other areas.

Canada is also pinning its hopes for postwar prosperity on foreign trade. Our neighbor to the north is now fourth in steel production, third

in timber, tops in nickel and near the top in asbestos, platinum, radium, gold, aluminum, mercury, copper, zinc, lead, silver, arsenic, magnesium, molybdenum. It also produces rubber, tin, tungsten, chrome, gasoline, optical goods, chemicals, plywood, plastics, textiles, paints, lacquers and machine tools. Total Canadian production has been running more than twice its prewar capacity.

Canada now has an aluminum capacity of 500,000 metric tons a year. Recently it offered Australia a large stockpile of aluminum. The country down under, desiring to be independent, is building an aluminum plant of its own with 6,000 tons capacity a year. This net loss in foreign trade is symptomatic of a world wide trend.

Normally, 30 percent of Canada's total income is derived from foreign trade. Foreign trade has never been more than 10 percent of U. S. total business. In 1944 Latin America exported \$2,000,000,000 of goods to U. S. and imported only \$1,500,000,000. Foreign nations as a whole will have accumulated about \$20,000,000,000 in gold and dollars by the end of 1945. Chili, Venezuela, Argentina, Brazil, Mexico and other Latin American countries are boosting tariffs. There is a protectionist trend on. This is largely an effort to conserve gold and dollars for the purchase of industrial equipment for national development. Once acquired, there will be less foreign trade than ever. The storm signals are going up all over the world.

Conceding that Europe needs rebuilding, with what will she pay? If we get their gold and dollars in spite of tariff barriers, all we can do with it is to bank the dollars and bury the gold at Ft. Knox. We can't take their goods because that would shut our own plants down. Of course, we can stockpile rare metals. We are now, already, stockpiling high grade iron, copper and zinc ore from Latin America and she is complaining, already, that she fears these stockpiles will be a barrier to postwar trade.

All these nations becoming industrialized will themselves be in the world market in the post war era looking for trade. There is now a factory in every port. The Peek report to President Roosevelt in 1934 showed that the chief result of all U. S. foreign trade between 1896 and 1934 was a net loss to U. S. of \$22,000,000,000. But the harpies are singing their bewitching song again. Anything to get away from solving the problems of a Continent of 200,000,000 consumers.

When these things play out, we can always donate some more foreign loans to our brethren across the seas. This is a good way to divide up America's abundance. The loans will be used to buy American technology and resources and there is little danger of either being paid back. Truly, Uncle Samuel is the best and kindest Santa Claus of them all. The Cavaliers of Spain, the Warlords of China, and the Dons of the Argentine can certify to it.

'New Kinds of Things'

Another important sounding school of economic philosophers are those who hold that new industries will do the trick. There are new fields in plastics, television, mass production of houses, reverse cycle refrigeration, central heating, aviation, etc. According to these proponents, millions of new jobs will be created that never existed before. Let's be glad that these new developments are coming in. However, let's also look at the fact that the most of them will only supersede present methods of operating in the various fields. Plastics will replace inferior materials. Nylon and rayon will replace silk and cotton. Synthetic rubber will replace natural rubber, if the International Rubber Cartel permits.

Mass production of housing may replace the present conspiracy between raw material suppliers, contractors, and unions. Central heating may make inroads into our archaic system of individual house heating. Reverse cycle refrigeration is also up for admission into the select circle of economic exploitation. Each and every one of these promises to eliminate more jobs than is created.

The greater the degree of technological advancement, the greater is the amount of advanced technology applied to new industries. Also, the sooner any new industry reaches its peak of production. This, plus the replacement factor, equals less man-hours per unit of production and less total man-hours of employment. With the advance of technology, the

death rate of old jobs destroyed always exceeds the birth rate of new jobs created. How many new jobs were created by strip steel mills, by tractors, by diesels, by the cotton picker, the cane and beet harvester, and so on?

All this Price System propaganda is designed to get your eyes off the ball. It is to get you worrying about side issues like politics, taxes, finance, honest money, etc. The revolutionary agents destroying the Price System are energy and technology. They proceed on their undirectional way with cold and utter ruthlessness. All the gabble in the world about 'new kinds of things' won't alter the fact that the sands of time are running perilously short for the Price System.

Then there are well intentioned proposals to build Valley Authorities similar to the T. V. A. on the Missouri, the Ohio and other rivers. These political hydrology plans are totally unrelated to each other. None of them are out of the discussion stage yet. If past history of similar projects is any guide, nothing will ever be done until all the proper pork barrels are filled in every sovereign state that happens to have a river running through it.

Then, of course, if the worst comes to the worst, we, the people, can always rake some more leaves, build some more parks and jails, and lean on shovels again. Take these and all the other Price System plans which we haven't space to enumerate and add them all up. The total comes

out to more and more Price System muddling. It's all picayunish. There is no hope for the people as a whole

and less security than ever before. If that's what it takes to make us think, that's what we deserve.

POSTWAR PROPOSALS OF TECHNOLOGY

'There's a Land That I Heard Of'

The proposals of technology for the postwar era divide themselves into two groups. These relate to North America's physical and its human resources. Let's look them over.

Technology says that, first of all, we must protect and conserve North America's number one resource, the land. To do this, we must reforest almost the entire nation. We must build thousands of earth dams at the headwaters of every river in North America. Reforestation and earth dams will help to control the flow of water. They will help to prevent floods and soil erosion. They will help to raise the underground level of water.

This project must be planned and executed on a Continental scale, because North America is one unified, geophysical area. All the lakes and rivers of North America must be hooked together into a unified waterways system, with deepened rivers and connecting canals. In effect, this is a Continent-wide system of inland waterways. When integrated as one system, it will restore the balance of nature between our forests, croplands, rainfall, waterflow and the underground water table.

Along with a Continental waterways system, we must construct a

Continental system of hydroelectric power dams. It's a natural part of the hydrology system. The purpose of this is to preserve our irreplaceable resources of coal and oil. With a Continental system of power dams, we need a Continental system of power transmission. Much of North America's available hydroelectric energy is in remote, unsettled parts. Electric power can be transmitted underground by direct current for about 3,000 miles with a line loss not exceeding 10 percent. This type of power transmission has been approved and okeyed by the best electrical engineers in America.

'Make No Little Plans'

Along with the Continental waterways, power dams, and power transmission design, North America needs a Continental system of super-highways. These would be very wide roads, with co-axial cable controlled speed lanes, no more than three percent grades or six percent curves. There would be no grade crossings whatsoever, but all overpasses and underpasses with cloverleaf intersections. This would also provide North America with a continuous Continental system of air fields for defense. Every foot of broad highway would be available in time of war

for the landing and taking off of flying wings.

The waterways system will also provide a permanent and unsurpassable transportation system for bulk freight at the lowest possible cost. It will furnish marvelous recreational facilities in time of peace and be constantly available for use in time of war. In other words, it is possible to bomb railroads and highways into rubble but not rivers and lakes.

This is a terrifically big job. It is truly worthy of North America. Anything less is picayunish and futile. The entire program of technology regarding North America's natural resources, of which this is only a small part, is a must. We must do it to prevent America from becoming a desert, to preserve our dwindling resources, and for Continental defense. The Price System will never do it because it would cost too much and because there's no profit in it. But technology can do it. The blueprint for this concept for a Continent is all worked out. Technocracy has the design.

Am I My Brother's Keeper?

Now for technology's proposals regarding North America's human resources. The draft records showed that America is in desperate need of a real public health system. This is another must because poor health is a national and Continental liability. This health system must be complete and free of cost to every citizen regardless of race, creed or color.

Every school of the healing art which has a scientific contribution to make will be represented. Individual health is public health and vice versa. Therefore, a real public health system will be compulsory. We'll have to be healthy as a duty to our common motherland.

North America also badly needs an educational system fit for the Power Age in which we live. This also must be complete and compulsory for all our young citizens, regardless of race, creed or color. It must be a *PUBLIC SCHOOL SYSTEM*.

Going a little further, it can be said that we need a housing system designed to house people instead of extracting rents and profits from them. The two functions produce entirely different end products.

Health, education and housing. These are only three of technology's proposals about what must be done regarding America's human resources. You can let your imagination run along the highways and by-ways of eugenics and eugenics. Wherever they affect the general welfare of humanity, science has the answer; technology has the design. But the Price System doesn't give a damn about such vital problems. It is organized to buy and sell for a profit. The age-old question still stands. Do you really want to be your brother's keeper? Technology, alone, can make it possible.

Wanted: One All Time Plan

If we are going to do the tremendous job which faces North

America, we have to get going. The North American Price System is busy conspiring with fascism all over the world to sell our birthright for a mess of profits. It holds forth nothing for us in the postwar period except a few more crumbs from the rich man's table. Have we become a nation of beggars, of cheap, money hungry chiselers? This is not the destiny of America. This is fascism.

If we are going to do this big job ahead and do it properly, several prerequisites are necessary. We have to adopt National and Continental policies which will do the following:

- a. Abolish all minority group's pressure on the Government.
- b. Conduct all industrial, agricultural and social operations according to technological principles.
- c. Unite all North Americans for the one common social objective of raising and protecting the general welfare.

The doing of this job along technological lines will guarantee a favorable postwar position to all citizens. It will assure a high standard of living for a long period in the future. It will make North America impregnable to attack from the outside and impervious to decay from within. It will create here the highest civilization the world has yet seen.

It is possible and practical now. We have the men, machines, materiel and knowledge with which to do it. We have the program, the design of operations. It is all ready. What are we waiting for? More hamburgers in a land of T-Bone Steaks? More crumbs from the rich man's table? More appeasement? More peace in our time? None of these crawling desires will avail us aught. The dictum of technology is inexorable. 'Unite, Operate and Prosper—or Suffer the Consequences.'

CONCLUSION

The Colonel's Lady and Judy O'Grady

After all is said and done, what is the one thing that all Americans want, the one thing on which we are all agreed?

Is it more waste, more crime, more accidents, more war, more depressions? No? Then, maybe it's less public health, less education, poorer housing, less equality of opportunity,

less security, less abundance, less distribution, more scarcity and lower incomes? No? Well, then, maybe it's more profits for business, more freedom for free enterprise, more and worse Price System muddling around with social problems. No, of course not, don't be silly. We don't want any of these things.

If we do not abandon the old Price System path of social progression in

the postwar era, it will lead us down the low road to American-style fascism. Then we will get all these social malignancies forced upon us, whether we like them or not.

NO! The things which all North Americans want is more goods and services and better goods and services. And, **WE WANT THEM NOW!** On this, we are unanimous.

The record shows that nearly all the worthwhile things in modern civilization came in since the industrial revolution began. We found them along the new technological path of social development. The conclusion becomes irresistible then that the only way to solve America's social problems is to apply a maximum of technological methods and a minimum of Price System interference.

Technology must be freed from the concentration camps of the Price System. Then it will be able to apply engineering principles to our engineering civilization. Freedom for technology is the greatest concept of freedom for which men have ever striven. It embraces within itself all the other more abstract freedoms and much more that is real, besides.

Divided, We Hang Separately

Most North Americans today are still like our primitive ancestors. We

think we can survive by a combination of hiding from, running away from, or outwitting our social problems. It can't be done that way now. Individual problems have become collective problems. Science and technology have made us one, for better or for worse. We must choose between the old path and the new path of social progression.

All that is necessary is that we have as much sense as a hound dog has. When a hound dog is on the trail of game, he follows his nose. He follows the scent of his prey because he knows that's the only way he'll ever catch up with it. All we, as a people, have to do is to follow the facts. They are like the scent along a trail. They and they alone can lead us to the things we want.

Howard Scott put it all into one sentence in February 1937 in A-9 of *Technocracy* Magazine in these words:

The aspirations of human society on the North American Continent must be *BUT* the projection of the technological pattern of this Continent.

That is the answer to our question: Which Way North America? Peace and Abundance—or Chaos and Scarcity?

Investigate Technocracy!

ADD DEFINITIONS

ECONOMICS—A rough approximation of a series of disagreements on the same foolishness. (The 'foolishness,' of course, refers to exchange

—the Price System's basis of social control through the exchange of money for resources, materials and services.)



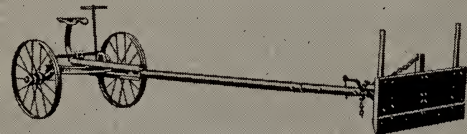
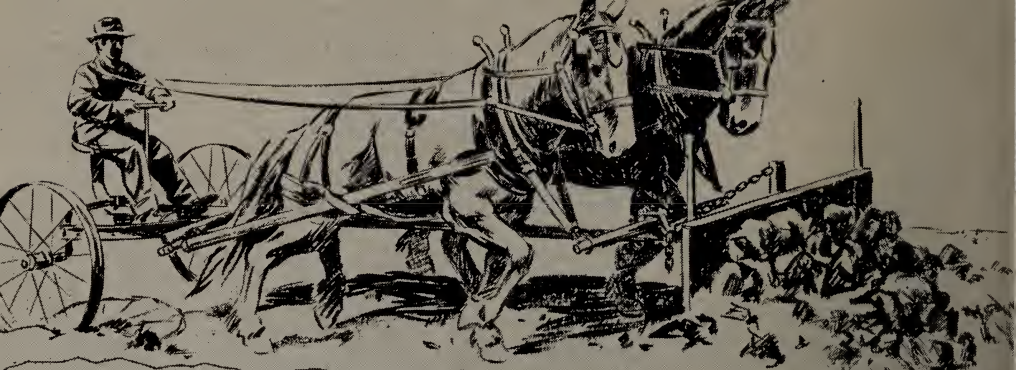
Photo: Courtesy The Heil Company

Yesterday and Today. 'Let's take a trip in memory's ship' back to those good old days to see how good they were. This old dump wagon was good as dump wagons went then. It had a chain hoist and drop, with lever control. Loaded with hand shovels, its capacity was one yard or so of dirt. Creeping along at three miles an hour with the power of two horses, it was tuned to the tempo of yesterday. A creaking axle, grease, manure and human labor was its theme song. Out of such rose the philosophy of toil.



Photo: Courtesy LaPlant Choate

Human or animal toil is out of order today. Where would the dump wagon be where big yardages of dirt are involved? You guessed it, in the dump. Here is a 'Carrimor' scraper, leveling and rough grading a highway. It digs, hauls and spreads its own load. Its capacity is many times that of a dump wagon. One technician does the work of dozens of horses and men and does it faster, cheaper and better. Science, engineering and power is the theme song here. Out of it rises the dictum of technology.



Russell "Bull Dozer" or Marsh Filler

It is built for filling in ditches, marshes or for shoving dirt over dump where wagons cannot travel. The power is behind the blade, so that it shoves the dirt into ditch or over embankment

Russell "Bull Dozer" or Marsh Filler

Russell "Bull Dozer." Weight 800 lbs. Codeword Fagend

Catalogue 1917

Photo: Courtesy Caterpillar Tractor Company

Here is the original bulldozer, from a 1917 road machinery catalogue. Our old friend the horse was its first source of power. Technology was already writing his release from toil then. Between 1915 and 1939 motorized equipment displaced over 10,000,000 horses on farms besides those displaced on earth moving operations and other work. In 1944 the number of horses on farms had declined to about 9,000,000, the lowest figure since 1874. Dobbin did his sweaty best to help build America. It all helped.



U. S. Navy Photo

But, it's no good today! Times have changed. You couldn't wage a trans-Pacific war 8,000 miles away with horse-powered bulldozers. Here is a Baker, hydraulic controlled bulldozer spreading material for a landing barge jetty somewhere in the South Pacific. Filling shell holes, leveling airfields, excavating, consolidating beach heads, even burying Japs, or whatever is needed, they do a swell job of backing up the man behind the gun. It takes technology for any big job today. Begin to catch on?

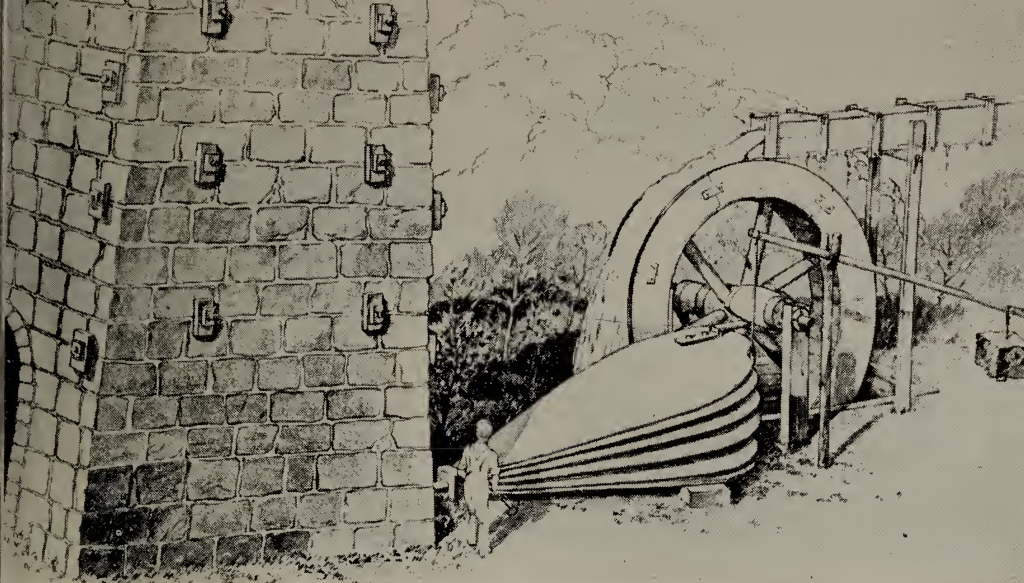


Photo: Courtesy Ingersoll-Rand Company

Still harping on the good old days. This ingenious water-wheel bellows was considered good in its day. It had the power of 20 horses in converting water power to air power to fan the fire in a cold blast charcoal furnace, as an aid to combustion. Yesterday men had the will to seek a way, but the correct way was not found until technology and more energy became available. Today we have the way, but where can we find the will? The will to do what? To distribute the abundance we can now produce.

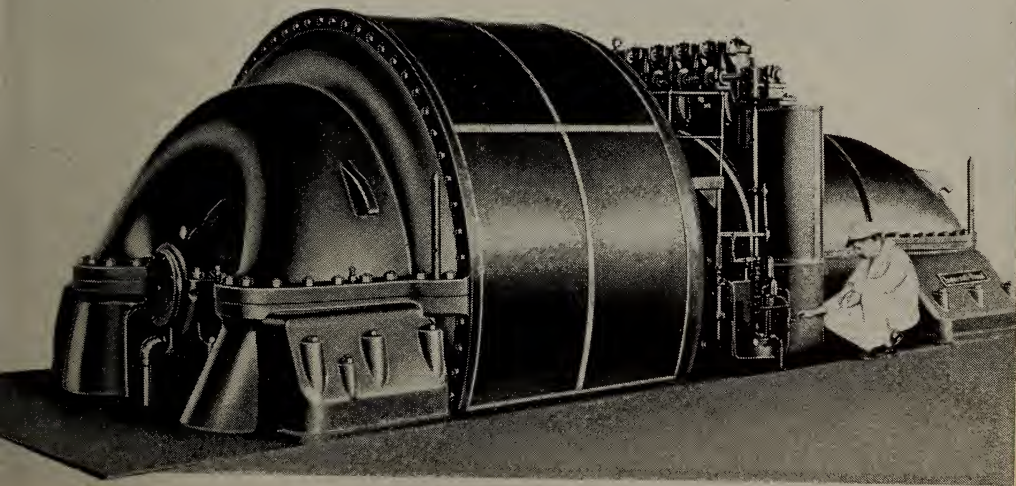


Photo: Courtesy Ingersoll-Rand Company

This Turbo Blower furnishes the air blast for furnaces today. It has the power of 14,500 horses to compress huge volumes of air. Yesterday men used their ingenuity to escape from scarcity. Then came technology! Today we use our ingenuity in an effort to escape from the abundance brought on by our ingenuity, so as to get back to the scarcity we used our ingenuity to escape from in the first place. Now, if we can develop enough ingenuity to outwit our own ingenuity, our social problem is solved.



Photo: Courtesy Towmotor Corporation

Not much ingenuity here. It's the good old way of heave ho and a couple of grunts. Look out, Shorty! If that case slips, there will be some sore shins around the place. Total power lifting here is $\frac{3}{10}$ th of one horse. It's enough to make poor old Dobbin blush for his friend, man. 'And they retired me to Horse Heaven.' Technology is at work here too, releasing man from the prison of his own weakness. The point is, can we see the point of what it all means? Every picture tells a story.



Photo: Courtesy Towmotor Corporation

Here's the way you lift with technology. Gross weight of the packing case is 3,600 lbs. Total power on the job is equal to 40 horses. The ad says: 'Let Men Direct Power, Not Generate It.' That's a swell idea. It's exactly what Technocracy says about social problems. Yesterday's toil generated yesterday's philosophy of toil. You have to get rid of the philosophy, as well as the toil. Today's technology is generating tomorrow's necessity to do it. Why do anything the hard way? Do you see?

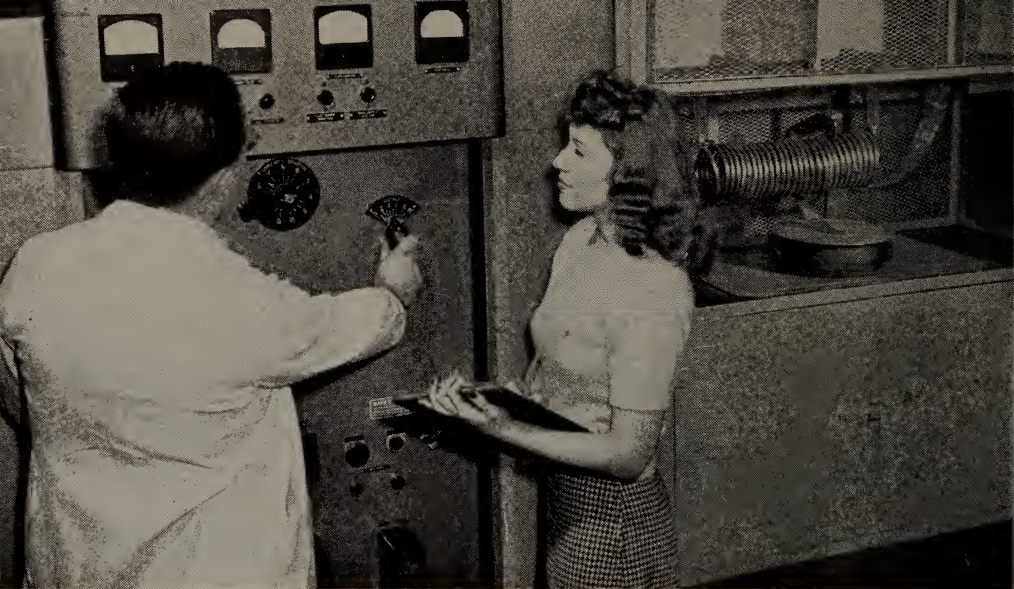


Photo: Courtesy Firestone Tire and Rubber Co.

Here that young but skilled revolutionist, technology, is at it again. This time it is electronic curing of rubber. See: Technology Marches On, in this issue: The process can increase output over 50 percent. Goodbye, man-hours. It does in minutes what it takes hours to do with steam. Large, hard rubber wheels that require 5 hours with steam are cured in 8 minutes; brake blocks, 7 hours by steam, 48 minutes by electronics; army tank treads, 60 minutes by steam, 28 minutes the new way; and so on.



Photo: Courtesy Firestone Tire and Rubber Co.

A small tire, after preheating electronically, is finished with steam. Tires are vulcanized in 10 minutes by a unit in use by the Army in combat zones. It is unnecessary to remove tire from the rim or the inner tube from the tire. The complete outfit weighs only 500 lbs. These engineers are getting good. Now, if they can do out a formula to maintain purchasing power, while decreasing man-hours of labor, that will be something. On second thought, it's already been done. Ask any Technocrat.

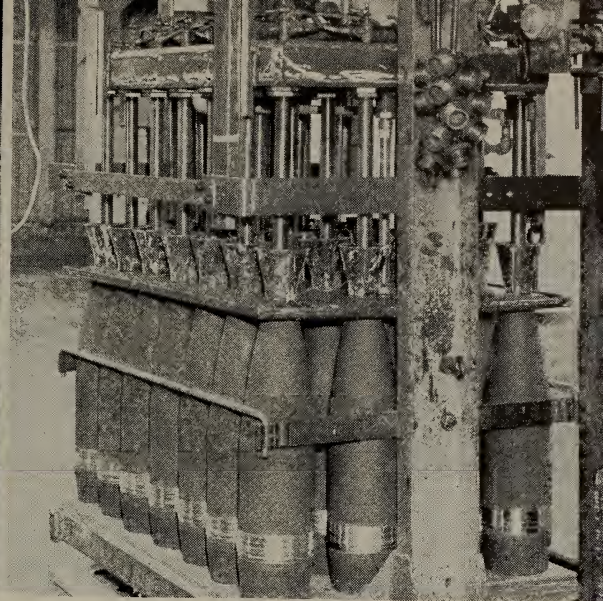


Photo: Courtesy Akron Beacon Journal

Yesterday they filled artillery shells with T.N.T. by hand. Today at the Ravenna Ordnance Center, the mechanism shown fills 28 at a clip with pre-measured quantities. The process will save 4,900,000 man-hours in 1945. Delivery of shells to overseas zones is greatly expedited. This spells more trouble for the Japs. They will have a bellyfull of American technology before this war is over. In America we will also feel its full impact in the postwar period. It's high time to be getting ready.



Signal Corps Photo

Yesterday, American soldiers landed on hostile shores in rowboats. Today, they move in on steel barges. This vessel is racing for an island in the Admiralty group. Yesterday, our men ate embalmed beef; today, they eat the best. Yesterday, more died from disease than by enemy bullets; today, they have the best medical care. Yesterday, they fought for the patterns of yesterday. Today, they fight to keep us from going back to yesterday. The difference between yesterday and today is technology.



Signal Corps Photo

Here is a close-up view of the human furnace at Buchenwald. It is the open door to yesterday; the only way there is to go back. Skulls, bones and burnings have marked the trail of fascism all down through history. The pattern is familiar. The counter-revolution against social change today continues. Fascism has been defeated on the military field but not on the social and industrial field. That is where its roots are. America must liquidate fascism at home before it can defeat fascism abroad.



Photo: Courtesy Burlington Railroad

This streamliner is typical of today. It's a hint of what the future holds. The oxcart is symbolic of yesterday. It's gone, let it rest in peace! We can't go back except by mass slaughter. Today is here now. Tomorrow and the New America are just around the corner. Yesterday, the pioneers had courage to venture into the unknown. The courage needed today is the courage to move forward into a predictable and known future. North America is outward bound toward its greater destiny. Let's Go!

America: Shall We Make It Beautiful?

By Lester B. Mull

Only Ten Percent Every Payday?

America was discovered, settled and developed industrially by people who were willing to take the risk. From their heroic ventures come the greatness of this Nation.

Here, truly, were practical dreamers, men of amazing vision, of indomitable courage and of vast determination. Although faced by untold difficulties, they drove ahead to develop the vast rich resources of America and to make it the largest granary of the world.

Along the paths they blazed throughout the nation, huge industrial centers, towns and cities sprang up, thereby making it possible for the raw material to flow to the hungry factories, and the finished product to be moved to near and distant markets.

Great changes have taken place in America since Dec. 7, 1941.

Our men and equipment have been transferred to terrains almost unheard of before the hostilities began.

Starting practically from scratch, America has built the most efficient and productive industrial war machine the world has ever known. However, this could not have been accomplished had we adhered strictly to prewar production methods.

Behind our production efforts are the scientists, engineers, designers,

research men, and mass production experts. There are also our engineer students, the men of tomorrow, on whose shoulders rest our future, as well as the industrial future of America. Thousands of these young men, already in uniform, have discarded until this debacle is over the desire for peacetime pleasures, in order to take the equivalent of a four year engineering course which is made available to them in a few months' time. This technical knowledge they are acquiring is now being applied on many battle fronts, to America's airplanes, guns, tanks and ships.

They are truly and patriotically behind the war effort. And behind these students of science and engineering, with endless patience and devotion, giving freely of their minds, hands and time, should be the American people.

Shade of Dan'l Boone

However, through careful investigation we find the shows, ball games, fishing boats, dance halls, beauty salons, and beer parlors well filled with Americans who have enjoyed three years of steady and prosperous employment. One reason for attending these places is because we must comply with the gas conservation program. Otherwise, the mountain resorts and fishing streams would be visited more frequently.

Yes, our forefathers have helped to make our future possible, but they never dreamed that we would become physical barriers in our own progress, too slow to comprehend the change which has taken place in man's world in the last 100 years, a change almost overnight, from the physical jungle into a wonderland of science and machinery, too slow to think and act intelligently after we have acquired the mills, mines, factories, raw materials, energy and power which would assure to every man, woman and child on this Con-

tinent a high standard of living from birth to death.

Nevertheless, the efficiency of America's high productive mechanism is increasing and at the same time the kilowatt hours are leveling off.

Americans, your opportunity to acquire physical wealth by human toil has passed, and it is now time that we learn how to live in our new world.

The day is fast approaching when we are going to be organized for science, or unorganized for chaos.

ONE GEOPHYSICAL UNIT

Army photographers in B-17 and B-24 bombers last year took aerial pictures of an area 292,000 square miles in Northern Alaska. 'Four-fifths of it was virtually unmapped before . . . much of it had never been seen by human eyes.' Using the newest trimetrogon photography, they mapped topographically an area 'as big as all of New England, New York, New Jersey, Pennsylvania, Maryland, Delaware, Virginia, West Virginia, and Tennessee.' Rivers that have been 'meandering toward the Arctic Ocean for untold centuries without ever being named,' show on the maps. The surveys also 'will show light on possible rich mineral deposits hundreds of miles from present human paths,' according to a report by Director William E. Wrather, of the U. S. Geological Survey.

At the southern tip of the Continental area, U. S. Army pilots have discovered the source of the Orinoco River, 1,700 miles long. A deep gorge in the mountains between Venezuela and Brazil was found to be the source. (It adds 1,000 more square miles to Venezuela's territory, as the river, by treaty, marks the boundary.)

In the year 1639 an explorer discovered

that nature had built a waterway. It was practically a canal, between the upper Rio Negro, which empties into the Amazon, and the southern end of the Orinoco River. The canal, which Von Humboldt called 'the only example of bifurcation forming in the very interior of a continent a natural connection between two great rivers and their basins,' is entirely in Venezuela. It has been named the Casiquiare Canal, and is being deepened and widened by U. S. Army engineers in cooperation with the Venezuelan government. Before the war is ended, it is expected to make use of the Casiquiare in moving barge loads of strategic minerals and tropical products.

It is even less known that the two largest waterfalls in the world are located in the northeastern corner of South America. The highest, in Venezuela, discovered about eight years ago by Jimmy Angel, an American aviator, is Angel's Falls, estimated between 3,000 and 5,000 feet high. Next in size is the Kukuenaam Falls, in British Guiana, 2,000 feet. (Ed. Note: Niagara Falls are less than 170 feet high.)

A conservative is a man who believes nothing should ever be done except for the first time.

Primer of Technocracy

By Education Division 8741-1

This series began nine issues back and concludes with this issue. It does not constitute a complete exploration but only an elementary introduction to some of the primary principles of the Body of Thought and the Organization known as Technocracy. In this article we will sum up some of the points brought out previously. In the future this department will attempt to illustrate fundamental principles of Technocracy by hooking them up with current events and incidents of importance on the contemporary social scene in North America.

Energy Is Basic

In the beginning there was energy. This physical force animates the entire universe. There is no manifestation of matter apart from energy, and vice versa. Being a physical force, it can be measured. When man first learned how to control fire, ages ago, he made one of the first practical applications of energy in his long social progression. Next came the domestication of plants and animals and the use of fossil fuels. Each one of these developments added to man's energy differential over the opposing forces of his environment. Man was learning how to tap into that great stream of energy flowing ceaselessly throughout the universe and to divert a part of it to his own use.

As time went on, crude windmills and waterwheels were developed. These and other simple mechanical devices in the nature of hand tools were about as far as man advanced, prior to the industrial revolution. For thousands of years mankind lived in a simple handicraft agrarian economy characterized by human toil and ever

present natural scarcity. There were no machines or technology to speak of. The ability of men to produce physical wealth was always geared down to the power output of the human body, plus the number of workers available.

Then, the industrial revolution and North America came on the world scene, both about the same time. Things began to change. The ability of man to produce rose with each new advance in science and technology. Exploration and conquest carried the new order into remote corners of the world. North America forged ahead because it had a great wealth of available resources, a natural chain of navigable rivers and lakes for transportation, a favorable climate, a laissez-faire political and business economy and a hardy race of pioneers who were out to make their fortune.

One Way Street

While the rest of the world moved rapidly enough into the first stage of the industrial revolution, certain more

avored areas developed into the second stage. In the first 169 years of its national existence, U. S. moved through both stages and on into the third stage. Canada, although a separate political entity in North America, kept pace with technological development in the U. S. Most of the rest of the world remained behind in the first or second stage of the industrial revolution.

This disparity of industrial development and capacity to produce between North America and the rest of the world is what makes the North American social problem unique. It is not a problem of how to divide up a scarcity equitably by philosophical and political means, but of how to distribute an abundance by engineering methods.

During all past history, the controlling superstructure of business, finance and politics that had developed out of the handicraft agrarian culture became fixed and static. While the underlying base of society, the means whereby men lived, was changed by the industrial revolution, this superstructure remained unchanged. This disparity of development is the root cause of the North American social problem. We have moved into a new physical environment but are still trying to operate our social structure by the old Price System methods developed thousands of years ago.

All the worthwhile things in American civilization came about as a result of the advancement of scientific knowledge in the last few hundred

years. The problem that North America is confronted with today is a problem of how to apply the methods of science to a solution of social problems. They cannot be solved any other way. Out of this social impasse, created by our advancement along scientific, technological, engineering and industrial lines and our lagging along social lines, arose a new body of thought.

Enter Technocracy

This new body of thought is the social aspect of science, or a method of applying scientific principles to social problems. It is known as Technocracy. It is a uniquely North American solution of a uniquely North American social problem. Technocracy derives nothing from any old or new world philosophy or political ideology or social reform or class warfare. It is an engineering analysis and synthesis for an engineering civilization. Technocracy arises out of the general field of science. One might say it is a new branch of science, the Science of Society.

The Organization of Technocracy is composed of a cross section of North American citizens who are educating their fellow citizens in regard to the nature and only possible solution of the American social problem. Technocracy is not a pressure group and has no axe of its own to grind. It merely illustrates the trend of events and presents unvarnished facts for consideration. It is the vehicle for transmitting the Body of Thought. It is a job that has to be done.

The methods of Technocracy, analysis, synthesis and operations are identical with those of science in the general field. They arise out of observation, research and experiment. All the internal and external operations of the Organization cling closely to scientific principles. In this respect Technocracy is somewhat of a pilot model of the next most probable form of social control. Before we can understand this, it is necessary to know what types of social control have existed in the past and what type we are living under now.

Four Stages of Social Life

Broadly speaking, we can divide man's social history into three periods. The fourth one is the next most probable type. The four stages of social life presented below can be classed as (1) Remote past; (2) Middle past; (3) Present; and (4) Future. They lap over each other to a great extent but there is a definite difference between them. This will be noticed more readily if one compares the first stage with the third, or vice versa.

STAGES OF SOCIAL LIFE

Stage	Basic Production Methods	Rules and Operating Characteristics	Method of Control	Superimposed Social Institutions
1. Autocracy	Hunting Fishing Agriculture Human Toil	Communal Barter Natural Scarcity	Rule by One	Tribalism Nepotism Priestcraft
2. Autocracy with Oligarchic Features	Agriculture Handicraft Human Toil	Barter and Price System Valuation and Exchange; Natural Scarcity	Rule by the Few	Chattel Slavery Feudalism Churchdom
3. Oligarchy with Democratic Features	Decreasing Toil and Handicraft; Growing Use of Technology and Energy	Price System Valuation and Delayed Exchange; Growth of Debt; Artificial Scarcity; Insecurity	Participation in Rule by Many but Actual Control by Few	Political Commercial Ecclesiastical
4. Technocracy with Physical Democracy	Complete Technological Operation; Full and Balanced Load Production	Non-Price Energy Cost Distribution; Abundance; Security; Leisure; Equal Opportunity	Rule by Vertical-Functional Control Within the Framework of a Scientific Design	Non-Political Non-Commercial Cultural Functional

From this it will be seen that the civilization of the future will be all that the civilizations of the past could

not be. The fourth stage of social life is what North America is headed for. It is possible to achieve this

right now on this Continent. We have the men, machines, materiel and resources. The alternative is social fascism, American style.

It means a reversion of American civilization to an earlier stage of development. If we fail to solve our social problems scientifically, they will be disposed of for us by civil war and fascist imposition. In the process, many millions of Americans must join their ancestors.

Technocracy's analysis has been ridiculed and smeared, but it has never been answered. There is no an-

swer to the correct answer. We cannot survive today as did our primitive ancestors by a combination of hiding from, running away from, or trying to outwit our natural enemies. The natural enemy of man today in North America is not the wild beasts of the jungle that his forebears had to compete with. It is the social system that he himself has made. It is the Price System, which is another way of saying it is ourselves, for the Price System is all of us.

When are you going to wake up and investigate Technocracy?

STRAGGLERS TAKE NOTICE

'The entire air war is a race to determine whether we or the Germans can keep 60 days ahead in scientific and technological developments. Such is the message brought back to America by William Benton, vice president of the University of Chicago. Authority for Benton's statement is Sir Arthur Harris, head of the bomber command in England, *who attributes England's survival to development of radar*. Benton said: "With radar 15 planes can do the work of 15,000. The battle of Britain was won by physicists and scientists in the universities." ' *Chicago Herald-American*, 10/11/43.

'At the present time, about 75 percent of the men discharged from the services want to go back to their old jobs. . . .

'Officials said this percentage probably will *decrease* as men remain away from their jobs longer and receive more of the *technical training* in which the modern army specializes.'

—*Christian Science Monitor*
12-21-43.

'World conditions after the peace will demand more individuals with broad educations than at any other period of world history. There will, of course, *be great demand for engineers and other scientists.*'

—Lt. Gen. Charles E. Kilbourne,
Supt. of Virginia
Military Institute.

The greatest social service business men are doing is putting other business men out of business.

Technocracy and Your Trade

The Automobile Worker
By Organization Division 8741-1

'The development of the motor vehicles industry is almost synonymous with the growth of mass production methods. In no other segment of the economy have rationalization, specialization, integration, and general mechanization of the productive processes been more highly developed.' (TNEC Monograph No. 22.)

Forty Dazzling Years

In 1899 there were only 2,000 workers employed in the automobile industry. By 1939, according to *Automobile Facts and Figures* for 1945, total employment had risen to 402,000. In 1900 there were 4,192 motor vehicles produced. In 1939 production was 3,577,292. This period of forty years covers the rise of the automotive industry, and also the rise of America's new technology, as a whole.

According to these figures, the production of motor vehicles in 1899 was less than 2 cars per man-year of employment. In 1939 it was about 8 cars per man-year. This amounts to about a 300 percent increase in output per man-year in 40 years. If the methods of motor vehicle production had remained unchanged between 1899 and 1939, the rate of increase of production would have mounted only in proportion to the increased number of workers employed. Then the 402,000 automobile workers of 1939 could have produced only about 800,000 motor vehicles. But they actually produced over 3,000,000. How

come? The answer is—energy and technology.

Figures are not at hand for the earliest years. However, in 1914 there were around 200,000 horsepower of prime moving engines and electric motors in use in the motor vehicles industry. In 1939 there were 853,672 horsepower of prime movers and 2,231,363 horsepower of electric motors in use. The technological improvements introduced into the motor vehicle industry between 1899 and 1939 are too many and varied even to attempt listing here. This industry is a classic example of modern mass production.

Our illustration, above, of the production per man-year can be depicted better by the index of unit labor requirements in the motor vehicles industry. This means the amount of labor required to produce one car, or truck. In the TNEC table of unit labor requirements, the year 1926 is taken to represent 100. With this as a standard, we can trace the falling demand for labor as technology and production increases. In 1919 the index of unit labor requirements stood at 183. In 1929, when the all-

time peak of production was reached, it stood at 78.5. By 1936 it had dropped to 67.8.

There is still another way to illustrate this trend by taking the index of output per man-hour of labor. The WPA National Research Project index takes the year 1929 to equal 100. With that as a standard, we can trace the rise in output per man-hours as technology and production increases. In 1919 it stood at 42.7 percent of 1929. By 1936 output per man-hour had soared to 115.7.

Watch The Jobs Go By

In 1941, the last peacetime year of motor vehicle production, total employment stood at 570,000. Harking back to 1899, when employment was a mere 2,000, this sounds impressive. Sixty percent of this 'new employment' had, however, been reached by 1919 and over 95 percent by 1929. Very few 'new jobs' have been created since then. We must also remember that a substantial part of this so-called new employment was merely replacement of former employment that existed in the carriage and wagon industry prior to the advent of the motor vehicle. It is not all 'new employment' by any means.

In 1929, 448,000 automobile workers produced 5,358,420 motor vehicles. In 1941, 570,000 workers produced only 4,838,561. In other words, 122,000 more workers in 1941 than in 1929 produced 419,857 less cars. This seems to be contradictory. We must bear in mind, however, that there were over 32,000,000 cars, busses, taxis, tractors, trucks, etc., al-

ready registered and in use in 1940 before the 1941 production was completed. Thirty-two million motor vehicles need a lot of replacement parts. The figures on total employment include workers necessary to make replacements and parts. So that, while 400,000 less cars were made in 1941 than in 1929, replacements and parts for 6,000,000 more motor vehicles than were registered in 1929 was included in the total production.

Then, too, figures on total employment are meaningless in themselves. It would be possible to double the number of employed by reducing the hours of work accordingly. If that were done, wages would have to be reduced by half. Otherwise, unit labor costs would go too high. The factor which determines purchasing power is the total man-hours of labor employed. This is a product of man-hours per unit of production, multiplied by the number of units produced. As we have seen, output per man-hour has been constantly rising, while unit labor requirements have been falling.

One More Postwar Plan

The United Automobile Workers have a postwar plan for the industry they work in. It is an ambitious plan. It seeks to create 1,000,000 jobs in the motor vehicle industry. It is asserted that even in the best pre-war years, the industry never reached capacity operation. This is defined as having been about 6,000,000 cars a year. We haven't figured out the load factor in the industry for the pre-war

years, but it's a cinch it wasn't any too high.

It is proposed to raise production to 10,000,000 cars and trucks, etc., a year. A sizeable proportion of this total, running from 10 to 20 percent, is scheduled for export. Where the foreign nations will get the purchasing power with which to buy up to 1,600,000 cars a year from the U. S. is not stated. Also overlooked, apparently, is the fact that England, France, Italy, Germany, Russia and other European nations also have producing motor vehicle industries.

About 8,000,000 cars a year are scheduled, in the U.A.W. plan, for domestic consumption. Where the American people will get the purchasing power with which to buy 8,000,000 cars a year is not stated either. The U.A.W., however, has a National Program to go along with its plan for the automotive industry. This is calculated to attain a 60,000,000 job economy in the postwar era.

We have no quarrel with this plan. It is much more far-seeing and socially conscious than anything advanced by the troglodyte minds of the financiers who control the motor vehicle industry. But it completely overlooks the overall facts of American industrial history and the records of the automobile industry. Succinctly stated, this can be put into one sentence. 'The only way to produce more is to apply more technology and less man-hours of labor.' That is the way we have been doing it, not only in the motor vehicle industry but in all manufacturing.

In *Technology and Livelihood*, pub-

lished by the Russell Sage Foundation in 1944, there is a table showing the rise in population, wage earners, production per wage earner, and volume of physical output in all manufacturing industries between 1899 and 1939. Taking the year 1899 to equal 100 for all four factors, the following changes occurred in these 40 years: Population rose from 100 to 175; wage earners rose from 100 to 187; production per wage earner rose from 100 to 199; and volume of physical output rose from 100 to 373.

This sums up as follows: Population increased 75 percent; number of wage earners increased 87 percent; production per wage earner increased 99 percent; but physical volume of production increased 273 percent. *Technology and Livelihood* observes:

Most significant is the fact that *increase in production out-runs the rate of increase both of population and of workers employed.* (Italics theirs)

Could anything be plainer than this? If you want to produce more of anything, whether it is shoes, ships or automobiles, you must install more technology and energy and displace as many man-hours as possible.

One More County Heard From

John Scoville, an economist for the Chrysler Corporation, made a speech one time. It was given before the Econometric Society of New York, December 30, 1935. During the course of it, he made a wild-eyed statement. This was to the effect that

the motor vehicles industry, with all of its contributory services and materials employed perhaps—

—close to 8,000,000 or about one-sixth of the gainfully employed. Probably not more than 3,000,000 of these have been taken from the ranks of the railroad employees, the carriage makers and the harness makers. That leaves about 5,000,000 extra jobs created by the advent of the automobile.

Technology and Livelihood proceeds to tear this propaganda to pieces, in typical restrained and dignified language. It cites four sources to refute Scoville's superficial conclusion. These are the Census Bureau; the Biennial Census of Manufacturers; Fabricant Solomon's Study, Employment in Manufacturing 1899-1939; and the National Bureau of Economic Research Comparable Figures for 1899-1937.

These sources are in the form of a table listing employment in the eight largest industries between 1899-1939. The industries listed include the largest outside industries contributing services and materiel to the automobile industry. They are steel and rolling mill products, cotton goods, lumber and timber products, printing and publishing, electrical machinery, apparatus and supplies. Rubber tires, tubes, etc., are not on the list. The peak of employment in these lines, though, never went much over 60,000 in the pre-war years.

Total employment in manufactur-

ing in 1899 was 4,495,900. By 1939 this had risen to 8,584,100. Now, if Scoville's statement is correct, there should have been 5,000,000 more jobs in 1939 than there were in 1899. Simple addition shows that 4,495,900 plus 5,000,000 equals 9,495,900. There were only 8,584,100 jobs in existence in manufacturing in 1939. Subtracting 8,584,100 from 9,495,900, we find that there's a shortage of 911,800 jobs somewhere. Perhaps John Scoville had them up his sleeve when he gave that speech. If we remember correctly, 1935 was about the middle of the Great Depression. We wonder why Mr. Scoville held out on these 911,800 jobs when they were needed so badly!

You Can't Fool All the People

Referring to Scoville's statement, *Technology and Livelihood* observes:

—the automobile industry has become the classic example to refute the widespread impression that technological change displaces workers and causes unemployment without compensating expansion. *The truth however seems to lie deeper.* (Italics ours.) For, as Table 3 plainly shows,—total figures for employment in all manufacturing trades combined do not indicate such great expansion in labor requirements to the level concerning which these larger estimates for the automobile alone are given. Yet the period covered, from 1899 to 1937, was precisely the time of growth of the automobile industry. * * *

The assembly line, for instance, with its specialization of tasks and accelerated output, is but one illustration of an increase in production whereby actual volume of production increases faster than total employment. This alteration in the relation between volume of production and labor requirements, which results from increasing labor productivity, is the deeper truth concerning the influence of technology on employment. Change in labor productivity has a more lasting influence on livelihood than mere displacement from old jobs or expansion of new industries.

So much for Mr. Scoville's wild conclusion that the automobile industry alone is responsible, not only for the entire rise in manufacturing employment between 1899 and 1939, but also for almost a million jobs that hadn't yet been born in 1939. Tut, Tut! Mr. John (Paul Bunyan) Scoville, the booby man will get you, if you don't watch out!

Me and My Shadow

No, Mr. Automobile Worker, there is no getting away from the uncomfortable fact that you are a part of the most highly mechanized industry of the Power Age. No amount of economic imbecility is going to help you when the last and greatest depression of all settles down around you. No minority pressure group plans of your own can possibly solve your problem then. Your fate is tied

up with that of all other Americans.

Listen to what Gunnar Myrdal, famed Swedish economist, has to say about the prospects for the automobile industry in the postwar era. Technocracy holds no brief for any economist. It has correctly defined economics as the pathology of debt. But, there are economists and economists. Most of them are full of screwball theories. Once in a great while there is one who is more forthright and honest. Myrdal is of the latter type. He made a painstaking survey of the U. S. economy. The title of it is *Economic Developments and Prospects in America*. Being a foreigner, Myrdal has less to lose by speaking right up. He can afford to be more objective. Referring to the prospects for the automotive industry in the postwar era, he writes:

One striking fact constantly overlooked in popular discussion is that if motor car production should be expanded to eight million a year,—the motor car industry would, nevertheless, be forced to lay off several hundred thousand workers.

No one could say it better. The only way to produce more is to work less. If we want 8,000,000 new cars a year, we must resign ourselves to the fact that there can be only a slight rise (if any) in employment above the highest peacetime level. Employment in production for war cannot be used as a gauge to measure peacetime jobs. As soon as the war is over, the dogs will be turned loose in the automobile industry, to eat each

other. You must remember that your precarious existence under the Price System is precarious precisely because that's the nature of a Price System.

Unite, Operate and Prosper

You have done a splendid job in production for war. You have organized into strong unions for the purpose of getting immediate economic benefits. This was a normal defensive reaction to your environment. Nothing you have done so far as individuals, or as a group, can possibly solve your central social problem. How are you going to get abundance, distribution, security and equal opportunity for yourself and family within the decaying framework of a dying economic system?

Every gain that you make as a minority group is at the expense of some other minority or of society as a whole. Your group *must* constantly be at war, or ready to fight, lest some other minority group chisels into your preferential advantage. Every other minority group *must* behave the same way. That's the Price System for you. Every gain that you make in hourly wages will always be soon cancelled out by new mechanisms which still further reduce the man-hours per unit necessary. Consequently, total man-hours are reduced. This reduces total purchasing power. Before you know it, you're back where you started from. There is no peace, no security, no stability anywhere.

Technology is ruthless. No one is to blame. It's a process. It's a physi-

cal trend. It's the very core of civilization in the Power Age of North America. It is unidirectional and irreversible. There's nothing anybody can do to stop it short of destroying civilization. Your social problem is no longer an individual or a minority group problem. Before any man is an automobile worker, or even a union man, he is an American citizen. Your problem is now a collective problem, the same as that of every other American. We are all in the same boat now. Science and technology have made us one, for better or for worse.

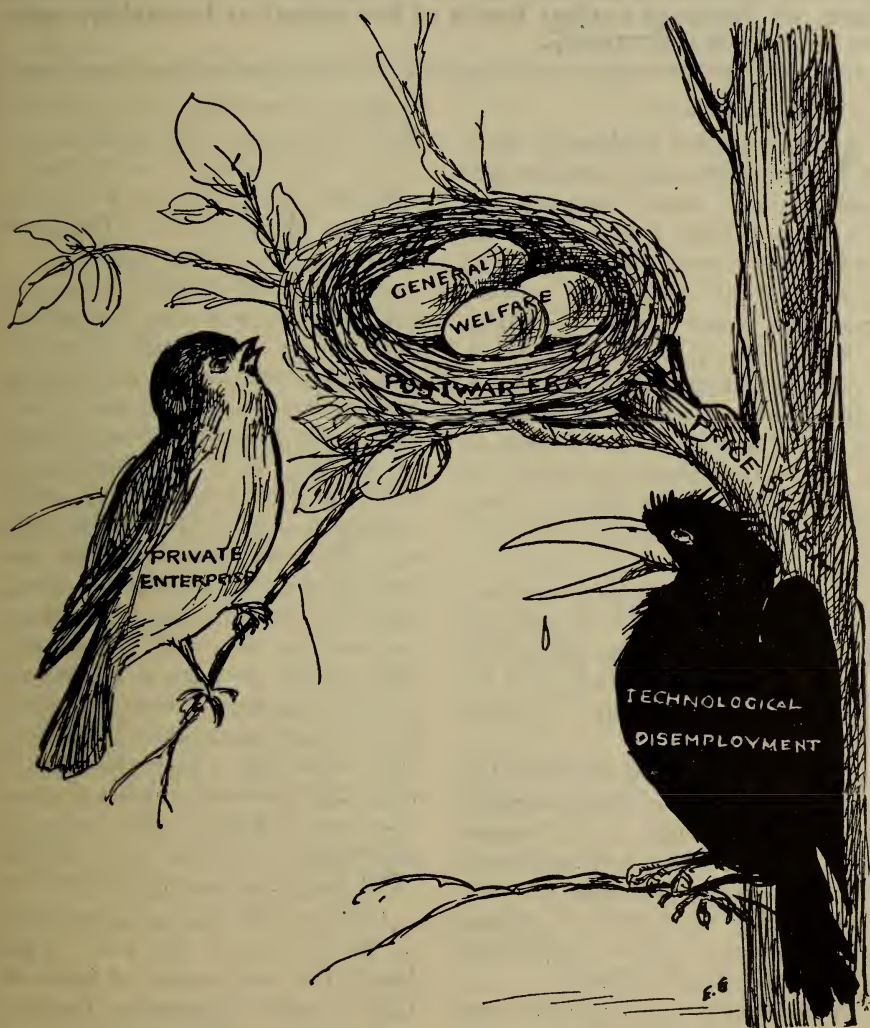
We can make it for the better. It will take all of us working together as a unit to do it. It is not enough to analyze the problem. You have to synthesize it also. You have to relate it to the great American social problem as a whole. Only thus can you correctly orient your own position. It is necessary to enlarge your field of social vision. Then your problem will fall into proper focus with others. The picture will clear up. The answer is there.

In union there is strength. The bigger and stronger the union (all other things being equal), the greater our strength. Let's think in the biggest possible terms. Let's think of all America as one operating unit, one functional organism. That's what it is, you know. It has the men, machines, materiel and resources to provide a very high standard of living to all its citizens, regardless of race, creed or color. Then all we have to do is apply technological methods to all America as a whole. What we put into it will come out as a great ad-

vance in the General Welfare. Can you think in such big terms, Mr. Automobile Worker? The dictum of technology is 'Unite, Operate and Prosper, or Suffer the Consequences.'

Have you got brains enough to comprehend, and courage enough to rise to the challenge?

Investigate Technocracy!



QUOTH THE RAVEN, "NEVER MORE."

Technology Marches On!

A Good Servant But a Poor Master

By Research Division 8741-1

Technology is the application of scientific principles, and physical laws, to industrial, agricultural, and social operations. The totality of these operations constitutes the North American social problem. Here, we illustrate various facets of the impact of technology upon our social structure today.

Agriculture and Food

‘A three-wheeled implement, operated by one man, now does flax binding work which formerly required a 5 man crew.’ The new method was worked out by the U. S. Department of Agriculture. (*Farm Implement News*, August 31, 1944)

‘A pea-pitching machine, described as a cross between a buck rake and a manure pitcher, eliminates the need for conveyors and does the work of 10 men in transporting peas into the Niagara Frontier Canning Co. plant at Newfane, N. Y.’ (*The Food Packer*, August, 1944.)

‘A machine built by spinach growers in Southern California will cut about 10 times as much spinach as its seven man crew could harvest by hand.’ (*Food Industries*, August, 1944.)

‘Three new machines developed for peanut farming have great potential labor-saving capacity. U. S. Department of Agriculture engineers estimate that these machines can cut harvest labor to 1/10th of present requirements.’ (*Farm Implement News*, September 14, 1944.)

‘A machine for removing the caps from strawberries is claimed to be

capable of removing the caps from 50 to 60 crates of strawberries an hour, whereas a woman worker averages only about $\frac{3}{4}$ ths of a crate in the same length of time.’ (*The Food Packer*, August, 1944.)

The 2,000,000 tractors in use today on farms is double the number that were in use in 1929. The total number of corn picking machines in use has increased 29 percent in the last 3 years. One picker does the work of 10 men. In 1944 International Harvester built twice as many as in any previous year. The total number of milking machines in use has increased 50 percent in the last 3 years, each machine halving the man-hours necessary for this work. Output per farm worker has gone up 28 percent and the number of acres harvested by one man has increased 14.5 percent in the last 4 years. In 1909 it took 12.7 man-hours of labor to grow one acre of wheat; today only 3.3 man-hours of labor are needed. (*Wall Street Journal*, April 24, 1945.)

Ed. Note: So you are going back to the farm after the war? What farm? The total number of farms in U. S. is rapidly decreasing. The first returns in the 1945 census of agri-

culture shows that in the first 300 counties listed, the average size of farms has increased 10 percent since 1940. The number of farms in the 300 counties decreased from 499,376 to 488,449; while the acreage cultivated increased 8 percent. As farm technology advances, there will be less farms, less farm workers, more surpluses of food, more subsidies and more Price System muddling. (See *Power on the Farm*, in A-13, *Technocracy Magazine*, published August, 1938.)

Manufacture for War

'When the National Cash Register Company undertook to manufacture the magazine for the 20-mm Oerlikon anti-aircraft gun, production practice at first was based on previously tested methods. More efficient methods and changes in product design and specifications have resulted in conservation of men, materials, and machines, and better products.' The changes resulted in eliminating over 300 machines, in saving over 20 tons of metal per month on one operation alone, and in the elimination of over 124,000 man-hours of labor per month. As we figure it, this comes out to the displacement of about 15,000 eight-hour shifts of work. (Quotation and data from the *Tool Engineer*, as reprinted in *Metals and Alloys*, January 1944. (Ed. Note: See *Man-Hours and Distribution*, middle of page 10 to middle of page 11.)

Aviation

'By using an airplane to sow the seed, the Truax-Traer Coal Company

has planted 1200 acres of 'spoil banks' to pasture grass in 26 hours. Five men, including the pilot of the plane, were used in the planting which took place near Canton, Illinois.' With normal methods, one man can sow about one acre a day and costs are \$5 to \$6 an acre compared with \$3.20 by plane. (*Wall Street Journal*, April 9, 1945.) *Ed Note:* As we figure it, not only was there a money-saving of \$1.80 per acre sowed for a total of \$3,160 but 1044 man-days of labor were dispensed with. Ha! Maybe here is where the future of aviation lies. See: *Technocracy Study Course*, bottom of page 150.

Vulcanizing Rubber

High frequency induction curing of rubber is 17 times faster than the conventional steam method. The process will eliminate thousands of man-hours of labor. **Vulcanization** is the joining of sulphur and rubber molecules through the application of heat. When steam is used, the heat must soak in slowly from the outside. Electronic equipment heats the entire product almost instantaneously throughout. The process is in the production stage. It can be used for dozens of rubber items, such as, tank tracks, rollers on which the tracks operate, solid rubber wheels for tractors and cars, for curing foamed sponge rubber for mattresses, upholstery, seat cushions, for vulcanizing patches in tires, recapping old tires and in the manufacture of new tires. (*Chicago Sun*, March 8, 1945.) *Ed. Note:* See *Technocracy Study*

Course, bottom half page 116 and top half page 117.

Conserving Resources

A chemical process has been developed for converting scrap aluminum into commercially pure aluminum. The process separates the aluminum from other metals and from the alloying material in the aluminum itself. The method dissolves the aluminum but does not affect alloying materials, steel nuts and bolts, copper piping, bronze bushings, rubber or other non-aluminum parts. The process makes possible the conservation of high-grade bauxite reserves and will eliminate most of the man-hours required to mine bauxite. (Data from *Business Week*, May 12, 1945.) *Ed. Note:* See *Minerals and Living*, in A-14 *Technocracy Magazine*, published October 1938.

Shade of Samuel Gompers

Shorter hours of work has always been an integral part of Labor's demands. Now, however, in many instances a shorter work day is not wanted. In the middle of May, 200 employees of the Bloomfield, Pennsylvania, plant of the American Smelting and Refining Company went on strike because the work week was reduced from 48 to 40 hours. The reduction in hours reduced take-home pay more than 20 percent. (Data from *Business Week*, May 26, 1945.) *Ed. Note:* See *Technocracy in Plain Terms*, bottom of page 15 and page 16.

Interest Rates

The Institute of Life Insurance re-

ports that real estate holdings of American life insurance companies at the end of 1944 reached the lowest level in relation to total assets since 1930. Real estate sales by insurance companies have continued in large volume since the first of this year. (*Wall Street Journal*, March 29, 1945.)

The net rate of interest earned in 1944 by the life insurance companies of the U. S. hit a new all-time low of 3.19 percent as compared with 3.29 percent in 1943, reports the Institute of Life Insurance. Government securities of all types last year accounted for 45 percent of total life insurance assets as against 40 percent in 1943 and about 25 percent in 1941. Real estate mortgage holdings accounted for 16 percent of total assets last year as compared with 20 percent in 1941. The Institute pointed out that about 80 percent of all corporate financing during the year (1944) was for refunding purposes, to take advantage of lower interest rates. The Institute added that the interest rate has tended downward for more than 20 years, and that this long-term decline has been largely responsible for the increase in policy costs over the past 15 years. (*Chicago Sun*, June 20, 1945.) *Ed. Note:* See *Twilight of Insurance, The Technocrat*, May 1940.

Postwar Plan

'Detroiters were warned today to "keep their shirts on" between 9 A.M. and 3 P.M. Sunday.

'Armed men and armored vehicles will be maneuvering in the streets in

many parts of the city. But there will be no reason for alarm. It will merely be the Detroit Police, the Michigan State Troops and the 728th Military Police battalion practicing.

'The three agencies have worked out on paper, ways of working together in event of a major disorder. Sunday they propose to test out the

paper plans on the street, under conditions of simulated disorder.

'Heads of all three agencies are anxious that citizens realize it is just practice.' (*Detroit News*, May 19, 1945.) *Ed. Note:* See *Introduction to Technocracy*, middle of page 25 and top of page 26.

ALL THE SAME ENERGY

Prof. J. D. Ryder of Iowa State College in an address before the Midwest Power Conference at the Palmer House, Chicago, April 14, 1944, defined *electronics* as

'that branch of science which treats of the functions of electrical energy as it travels through a vacuum as in X-Ray or radio tubes or through gas, as in neon lights.'

His definition drew a line between *electronics* and *electricity*, since electricity 'treats of energy passing through a solid, such as copper wire, or a liquid, as in electroplating.'

Prof. Ryder further pointed out that despite the fact that electronics 'is a branch of science,' there are only three reasons why electronics will be manufactured and sold (*Ed. note:* Under the Price System, of course), (a) if they do something no other device can do, such as smoke recording; (b) if they do something better than any other system, such as temperature recording; and (c) if they are cheaper than any other system.

(*Chicago Daily News*, April 14, 1944).

According to the General Motors Research Laboratory, the energy in a gallon of gasoline used in an automobile is expended in the following manner:

- 40 percent in heating the cooling water
- 20 percent in incompletely burned fuel
- 20 percent as heat in gas
- 10 percent in engine friction losses
- 2 percent in transmission friction
- 8 percent in useful work

'What you think about depends on what you eat and not on the books you read,' declared Dr. T. C. Barnes of the Hahnemann Medical College, Philadelphia, recently before the American Association for the Advancement of Science. Brain waves, the rhythmic electrical pulsations that can be measured by sufficiently delicate detecting instruments through skin and scalp, are greatly influenced by the concentration of sugar in the blood, Dr. Barnes found. These waves, he explained, are produced by a complex chemical known as acetylcholine, which requires sugar and carbon dioxide for its build-up.'

(*Science Digest*, November 1944)

There is an old axiom to the effect that quantitative changes, if pressed far enough, become, in time, qualitative changes. Thus, if you heat cool water one degree, it is still water; heat it yet another degree, and it remains water. But, in time, you reach 211 degrees Fahrenheit. When that point has been attained, the application of just one more degree of heat, in no way different from what has gone before, gives you a material entirely new and different; not water, steam.

We leave it to our readers to find the connection between the above and America's social problems today.

There were 214,000,000 wheels in use in the U. S. A. on January 26, 1945. (Research Division 8741-1.)

In the Question Box

By Public Speakers Division 8741-1

Who supplies Technocracy Speakers or Organizers with money and cars?

B. R. T.

They supply themselves with money and cars. Technocracy Inc. does not pay any salaries, commissions, bonuses, royalties or pecuniary compensation of any kind to Authorized Speakers and Organizers. Practically every member of Technocracy, except those who are retired, hold down some kind of a job in the Price System. After the demands of the system have been met, the members put in their spare time functioning for Technocracy on a voluntary, non-paid basis. When Speakers or Organizers go on a Tour, the various Sections visited pay traveling and hotel expenses. That's all they get out of it. Since gas rationing went in, there have been no tours by car. If a member has a car, he may use it in his home town, but that's all.

Are the chiseling practices of the Price System now being practiced in Soviet Russia?

E. N. T.

We are not really as well posted on the opportunities for chiseling in the Soviet Union (if any) as we would like to be. However, judging from the differences between Russia's economy and ours, we would say that the opportunities to practice chiseling are decidedly slim there. You must re-

member that there is no such thing as private enterprise in Russia. Of course, it's a Price System economy. However, instead of private enterprise they have state enterprise. The political Government owns and operates everything. The greatest amount of chiseling in any economy is connected with buying, selling and exchanging goods for a profit. That type of chiseling is out in Russia because the government exercises a monopoly on buying, selling and exchanging goods for a profit. There is such a thing as political chiseling. We wouldn't be surprised if Russia is cursed with a due share of that. It seems to be a part of the political method of determining social decisions. Only a technological control can free any economy from business, political and social chiseling.

Might not abolishing the right of minorities to influence the government end the rights of minorities in every direction? Is this not fascism?

H. B. D.

It's strange that you should worry about the 'rights' of minorities instead of the 'rights' of the general welfare of all. Don't you realize that fascism is the imposition of the 'rights' of a selected few minority groups upon the mass of the people? Don't you realize that any act of any government whose end product is to

increase the 'rights' of a minority pressure group is a pro-fascist act? We are not concerned here about cultural, religious or philosophical 'rights' peculiar to any racial or national minority. They can hang onto them until the cows come home. What we are concerned with is the so-called 'right' of any minority pressure group to chisel a preferential advantage for itself at the expense of the majority and the welfare of all. Americanism means majority rule, not minority rule. Let's worry more about the 'rights' of the 98 percent who always pay through the nose under a Price System and less about the 'rights' of the 2 percent. They are taking good care of their own 'rights.' That's just the trouble. Right?

Technocracy seems to be ideal, but how can it work, and will it?

R. H. K.

How does a steam engine work, an internal combustion engine, a hydraulic pump, an electrical circuit, a radio, an airplane, a street car, a telephone, or anything else familiar to our industrial civilization? The answer is that these things work in obedience to physical principles. Are you certain that the Sun will rise tomorrow and having risen that it will set again? Are you certain that the tides will continue to rise and fall in obedience to the gravitational pull of the moon? Are you certain that

The first man to kindle a fire made the earliest known application of physical principles to human needs.

Halley's Comet will return once every 75 years? Are you certain that the four seasons of the year will carry on their orderly progression? Yes, as certain as the weight of scientific probability can make anything certain. That's how certain it is that Technocracy will work. Technocracy is a scientific design of social operations involving the application of physical principles to our entire economy. It will work all right. The problem is how to get Americans to work for Technocracy. What are you doing about it?

How can the Total Conscription plan of Technocracy be enforced in North America without the elimination of our present day government?

C. R. M.

Total Conscription could not possibly be enforced in North America except by our present day government. Anything else would be fascism. The elimination of the present day government is the very last thing desired by Total Conscription. If you will read the program, you will see that it is to be installed by the government, not Technocracy. The program carries its own time limitation in it. Thus, the government installs it and when the time is up, discontinues it. The trouble with us is we're so conditioned to being cheated and hoodwinked by the Price System that we can't recognize a straightforward proposition when it is put up to us.

We wonder what happens in a court of law when a positive identification runs smack up against a perfect alibi.

Each in His Own Tongue

By Publications Division 8741-1

VOICE OF THE PRICE SYSTEM

Stereotyped form letters won't give a Senator courage, or information, or insight—or even the willies. But 1,000 individual letters, written from information provided by the N. A. C., can head in, smoke out, or buck up any man who votes on Capitol Hill.

From instructions to business men in the handbook of the National Affairs Committee organized by the Chamber of Commerce of the U. S. to enlist individual business men in a campaign to bring pressure to bear upon Congress. (As quoted in the *Wall Street Journal*, May 11, 1945.)

If widespread unemployment occurs after the war, people will demand that something be done by the government—which may be contrary to the spirit of free enterprise.

William Muirhead, president of the Associated General Contractors of America. (As quoted in *The Economist*, November 25, 1944.)

The public generally looks at war products as possessing a salvage value. They feel the same way about the surplus plants. The excess of aircraft and plants which constitutes

practically all our surplus must be considered just as expendable as the shells that hurtled across the Rhine or as the rockets that zoomed into Iwo Jima and Okinawa.

Eugene E. Wilson, president of the Aeronautical Chamber of Commerce in an address before the Chicago Forum on Aviation. (As reported in the *Wall Street Journal*, May 16, 1945.)

At the hands of the state security and serfdom are ultimately and inevitably identical as economic facts, and the political forms in which they are dressed

up are unimportant.

Virgil Jordan, president of the National Industrial Conference Board, in an address before the Chicago Association of Commerce, April 18, 1945. (As reported by the *Chicago Sun*, April 19, 1945.)

If on official trips, you put bay rum on your expense account, then put it on your hair. Otherwise it is petty graft and you will qualify as a petty grafter. No senatorial graft ought ever to be petty. That is, not too petty. Advice given by Senator Alben W. Barkley (Dem. Ky.) to new senators

at the National Press Club semi-annual new senators' party. (As reported by Bascom N. Timmons in the *Chicago Sun*, April 9, 1945.)

Not only do I think there is no good reason to publish any of the salaries or profit sharing except the largest, but also I think such publication may do, and actually has done, great harm; this is especially true when large companies and the officers are located in small communities where people all know each other.

Gerard Swope, former President of the General Electric Company, in an

article in the spring issue of the *Harvard Business Review*. (As reported in the *Wall Street Journal*, April 8, 1945.)

All the good in the world today is being threatened by the masses. No government should give the people a choice between good and evil. When the people turn into a mass . . . the majority invariably choose evil instead of good.

Monsignor Fulton J. Sheen, in a Lenten sermon in St. Patrick's cathedral in New York, March 18, 1945. (As quoted by the *New York Times*, March 19, 1945.)

VOICE OF TECHNOLOGY

One time a big manufacturer looked at one of our gadgets and practically swooned. "Good Lord, man, we can't put *that* on the market." I said, "Why not? Isn't it any good?" He said, "That's the trouble. It's *too* good. If that thing got out, it would ruin a whole industry. We couldn't compete against it."

Maybe that's good industrial economy, but it's not for poor old Bingle. Seems to me if a thing is that good, John Q. and his missus are entitled to have it. If it ruins a whole industry, why it ruins a whole industry—and builds a better one. That's just one case; we've had others. Generally speaking, we have

found manufacturers afraid to tackle new things.

Bing Crosby, in his article 'I Got Plenty of Mousetraps,' describing the Crosby Research Foundation for inventors, in the *American Magazine*, July, 1945. (Italic's Bing's.)

America's productive capacity has been increased to almost unbelievable proportions during the war. The domestic market will be unable to absorb the present output after hostilities cease, except for the relatively brief period when depleted inventories are being replenished. Export outlets will be the only alternative to a sharp decrease in our postwar output, with its concomitant unemployment, re-

duced purchasing power, deflation — and, inevitably, depression.

Extract from a pamphlet put out by the Chicago Association of Commerce. (As quoted by Edwin A. Lahey in the *Chicago Daily News*, Jan. 7, 1945.)

In the past, America's mastery of mass production methods has been a great asset in competition for world markets. This American technique often has enabled us to offset the much lower wage levels of other parts of the world.

It seems reasonable to assume that in the post-war era America will not enjoy such a wide margin of advantage over other nations in the matter of production know-how as was the case in pre-war days. The vast increase in the tempo of mechanized production, brought about by the war, has not been experienced by America alone. Russia and the British Empire are notable among other nations which have adopted the faster pace. And we have been unstinting not only in supplying finished goods to these Allies but also in supplying productive machinery and full knowledge of our methods.

P. W. Litchfield, chairman of the Board of the Goodyear Tire and Rubber Company, in *The Goodyear News*, April, 1945.

With the water table falling over so great a part of the

United States and with soil erosion but little checked, there is a note of tragic absurdity in the grandiose talk of the coming economy of plenty. Unless tall talk and blueprints handed down from on high are replaced by actual work of practical conservation, this country will be headed in a few decades toward a desert economy rather than toward a more abundant life.

Extract from an editorial in the *Chicago Daily News*, August 30, 1944.

It is not unfair to say that the American people, except for a few million, are guilty of the crime of indifference in the face of race prejudice, economic exploitation, political corruption and the degradation of oppressed minorities.

Robert M. Hutchins, president of the University of Chicago, in an address to graduates of the University, June 15, 1945. (As reported in the *Chicago Times*, of the same date.)

The basis of the scientific process is the reproducible experiment. It is the only fundamental tool at our command for extending our knowledge of the universe. It is the accepted scientific method, and when applied to obtain a better understanding of our environment, it is called "scientific research." Even logic is secondary in importance to the reproducible experiment. Mathematics is the only branch of science which

has passed from the realm of the experimental to the utopia of pure logic.

Thomas Midgley, Jr., former president of the American Chemical So-

ciety. (As quoted in a Summary on The Future of Industrial Research by Frank A. Howard, president, Standard Oil Development Company.)

WASTE NOT, PROFIT NOT

More Americans have lost their lives by fires since 1900 than have been killed in all the wars fought by the United States. Since the turn of the century 425,000 persons have been trampled, suffocated and burned to death in this country.—National Fire Protection Association.

Property loss by fires in U. S. is now running over \$800 a minute for a total of over \$1,000,000 every day. Data and statement by Elmer F. Riske, manager of the Cook County inspection bureau, before the engineering division of the Greater Chicago Safety Council. (As reported in the *Chicago Times*, April 21, 1945.)

In the first 90 days of 1945 there were more than 96 fires a day in the City of Chicago, or a total for the period of 8,666 fires. (Chief Fire Marshal Anthony J. Mullaney in the *Chicago Times*, April 4, 1945.)

'The real wealth of a country consists of the factories and the machinery, the farms and the mines, which makes possible the production of useful things. It also includes the railroads, the street cars, and the light and power equipment.'—Extract from editorial in *Chicago Tribune*, December 12, 1944.

BURIED PATENTS DEPT.

A total of 9,000 tons of high quality alloy

steel was used last year in making 3,500,000,000 razor blades. This amounted to nearly ten million blades per day, allowing every adult American male about one new blade every three days. That these 9,000 tons of alloy steel could have been used to better purpose in the war effort cannot be denied. But would that necessarily force American civilian and uniformed men to grow beards? Not when the same tonnage of steel, by a simple change in the metallurgical formula, can be made to turn out blades that would last the male population for years!

About the best the Price System has to offer is the 'Swedish stainless steel' advertised by a Chicago department store. They 'give you 15 to 30 smooth shaves per blade—at \$1 a dozen,' or other more expensive blades with not much more life.

However, in the December 1944 issue of *McCall's* magazine, is the following scoop: 'Coming soon—add to your list of post-war products: a razor blade that needs to be sharpened only once in five years.'

You can be sure that any such blade will never be widely marketed under the Price System, nor would the blade with tungsten-carbide edge described by Technocracy over a decade ago (at an energy cost of only 20 percent more than the ordinary blade; it would last 20 years). For the reasons why not, see the dividend statements of manufacturers of the 3-shave blades, as well as the particularly interesting discussion of this problem in the official *Technocracy Study Course*, where it is given as an example of Price System wastefulness of non-replaceable resources. (Research Division 8741-1).

STRAIGHT AS THE CROW FLIES

Of all the notable things on earth
The queerest is the pride in WORTH
In this American nation.

He's WORTH a million, is the cry
So emulate this WORTHY guy,
Chisel and cheat and bribe . . . and lie—
Then form a corporation.

Take warning now, my grasping friend,
The ladder of WORTH you can't ascend
Without good reason to apprehend
That you'll find it greased near the top-
most end
With excess profits' taxation.

That furthermore, your frenzied climb
Toward social heights, and WORTH sub-
lime
Will end . . . by simple calculation
In Government expropriation.

Herb Robbins

TAKE IT EASY

'When the stress and strain of our war is over and the great inevitable economic depression follows, leaving in its wake victims of financial reverses, high taxes, etc., the resources of the nervous systems of our people will be fatigued to the utmost, the sequel of which will be insomnia and emotional instability, relief of which will be sought from the family physician. If the physician does prescribe some form of barbiturate, we shall subsequently see a rise in mortality and morbidity due to their increased use.'—Dr. William D. McNally of the Cook County, Illinois, Coroner's Office, as reported in *P.M.* January 5, 1945.

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TECHNOCRACY

NORTH AMERICA'S ONLY SOCIAL DYNAMIC

WHAT?

★ Technocracy is the only North American social movement with a North American program which has become widespread on this continent. It has no affiliation with any other organization, group or association either in North America or elsewhere.

★ The basic unit of Technocracy is the chartered Section consisting of a minimum of 25 members and running up to several hundred.

★ It is not a commercial organization or a political party; it has no financial subsidy or endowment and has no debts. Technocracy is supported entirely by the dues and donations of its own members. The widespread membership activities of Technocracy are performed voluntarily; no royalties, commissions or bonuses are paid, and only a small full-time staff receives subsistence allowances. The annual dues are \$6.00 which are paid by the member to his local Section.

★ Members wear the chromium and vermillion insignia of Technocracy—the Moned, an ancient generic symbol signifying balance.

WHERE?

★ There are units and members of Technocracy in almost every State in the U. S. and in all Provinces in Canada, and in addition there are members in Alaska, Hawaii, Panama, Puerto Rico and in numerous other places with the Armed Forces.

★ Members of Technocracy are glad to meet army wives to discuss Technocracy's Victory Program with any interested people and Continental Headquarters will be pleased to inform anyone of the location of the nearest Technocracy unit.

WHEN?

★ Technocracy originated in the winter of 1918-1919 when Howard Scott formed a group of scientists, engineers and economists that became known in 1920 as the Technical Alliance—a research organization. In 1933 it was incorporated under the laws of the State of New York as a non-profit, non-political, non-sectarian membership organization. In 1934, Howard Scott, Director-in-Chief, made his first Continental lecture tour which laid the foundations of the present nation-wide membership organization. Since 1934 Technocracy has grown steadily without any spectacular spurts, revivals, collapses or rebirths. This is in spite of the fact that the press has generally 'held the lid' on Technocracy, until early in 1942 when it made the tremendous 'discovery' that Technocracy had been reborn suddenly full-fledged with all its members, headquarters, etc., in full swing!

WHO?

★ Technocracy was built in North America by North Americans. It is composed of North American citizens of all walks of life, Technocracy's membership is a composite of all the occupations, economic levels, races and religions which make up this continent. Membership is open only to North American citizens. Aliens, Asiatics and politicians are not eligible. (By politicians is meant those holding elective political office or active office in any political party.)

★ Doctor, lawyer, storekeeper, farmer, mechanic, teacher, preacher or housewife—as long as you are a patriotic North American—you are welcome in Technocracy.

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"When we begin to feel the order of nature in our very bones, then only will we respect it and proceed to shape our institutions, our lives, and the lives of our children in harmony with it."

Paul B. Sears, Professor of Botany at Oberlin
College in the New Republic, June 11, 1945.

GREAT LAKES TECHNOCRAT

25c

Sept Oct 1945
Volume III

Number 6

25c

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GREAT LAKES TECHNOCRAT

SEPTEMBER-OCTOBER, 1945 ★ VOL. III ★ NO. 6 ★ WHOLE NO. 75

Illustrating the Futility of Price System Methods of Operation; Interpreting the Trend of Events from the Social Aspects of Science; and Presenting the Specifications for Total Mobilization for Peace!

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TECHNOCRACY DIGEST

625 W. Pender Street

Vancouver, B. C., Canada

From the Camera's Eyerview

The Old Civilization vs The New

What Price Opinion?

IF you ask the average man to point out the difference between mankind's way of living 7000 years ago and today he is likely to snort: 'They weren't civilized 7000 years ago.' If you ask him what he means by civilized he's almost sure to say: 'Any "dope" knows that.' If you demand a better definition he'll refer you to the dictionary. That ends it as far as he is concerned.

Nevertheless, dictionary definitions are, like all other definitions, simply arbitrary agreements among men. They often serve to conceal lack of understanding by offering verbal substitutes for other terms. Webster tells us that to 'civilize' means to 'reclaim from savagery; educate; refine; humanize.' Civilization is defined as the 'relative advancement of culture' in respect to these ideas. By a little digging beneath the surface we find that all this means precisely nothing, since there are no absolute standards of education, refinement or humanity, as yet.

So we begin our quest for the difference between mankind's way of living 7000 years ago and today from the happy hunting grounds of opinion, where one man's ideas can grow as tall as another's and there is room for all. However, if we stay in these lush fields we'll never get anywhere with our query. The climate of opinion is too agreeable to the ego. So, let's venture forth to the dry land of facts. Precise knowledge, like the shamrock of Ireland, grows nowhere else.

Civilization is not a collection of sentiments or an ideology. It's a way of living. Basically, it is the means whereby men get their living from their environment; plus the institutions which have developed to regulate their co-habitation. This definition is not a verbal substitute for another word but an explanation in terms of physical and social meaning. It is also a fact, since it is the close agreement of a series of observations of the same phenomenon. Anyone who cares to make a study can check up on it.

7000 Years Ago and Today

From remote antiquity down to about 200 years ago the means whereby men got their living from their environment changed but little. The chief source of power available with which to do work was the human body. Consequently, no more could be produced than was possible with the total energy of the working population. The domestication of plants and animals extended man's control over his environment. But, by and large, that control was meager for thousands of years. It was a hand to mouth existence for the great majority; with special privileges for the favored few. Civilization became stabilized at a low order of magnitude of operations, in a state of ever present natural scarcity. This socially static state endured until the 18th Century. During this long period the institutions developed to regulate society became fixed and frozen in folklore and tradition.

To be sure there were changes in political states, in philosophic and moral concepts and in titles to the means of production, from time to time. But these changes were superficial involving only changes in systems of thought and not in the fundamental means whereby men lived. The order of magnitude of operations remained the same. Whether mankind made any progress in education, refinement or humanity during the Age of Scarcity is a moot question.

Science and its stalwart son technology are reshaping civilization. They are literally creating a new culture within the shell of the old. The old civilization of toil and scarcity is passing away before our very eyes. With it will go all the value prestige and phony orchids of culture that sprang from its dung heaps of scarcity. The new culture of the Power Age is coming in, impelled by the resistless processes of technology. With it will come abundance and equal opportunity for all. Then technology will be released from the control of Price System interference and obscurantism. It will be set free to perform its prodigies in that 'new world acoming.' And its greatest prodigy of all will be the inevitable demonstration that freedom of technology is the foundation of all other freedoms.



Photo: Courtesy Air Transport Association

How far is an hour, in distance? As far as available transportation technology permits. How far is a scientific idea, in progression? As far as collective social consciousness recognizes the trend of events brought on by the impact of physical laws. This 200 m.p.h. plane typifies the Power Age which demands scientific operation. The horse and buggy typifies all of yesterday's 7000 years.



Photo: Courtesy Anheuser Busch

Opinions (philosophy) or measurement (facts)? That is the great question of this age. When granddaddy was in his prime, the age of opinion was in flower. All America enjoyed a free ride on the expanding growth curve of technology for about 150 years. We came to think our opinions had something to do with it. That delusion will soon be rectified. Today's problems won't yield to debates around a pot-bellied stove in a general store. Look back at the past in this picture; it's gone for good.

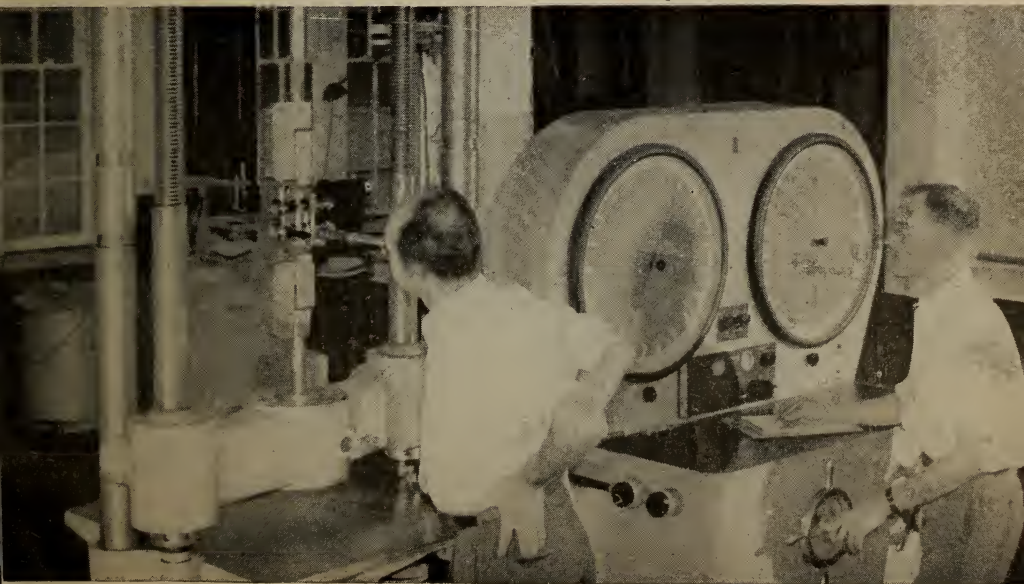


Photo: Courtesy The American Brass Company

Here is a splendid example of measurement, the Extensometer. Tensile strength, elongation, yield strength and other data of copper alloys are determined by this precision tension testing machine. Note the attendant's attitudes. There's no guesswork or opinions here. Facts dictate. It's just about time this attitude was carried over into the field of social problems. Their complexity and magnitude today invalidate opinions and philosophy, and demands the scientific approach.

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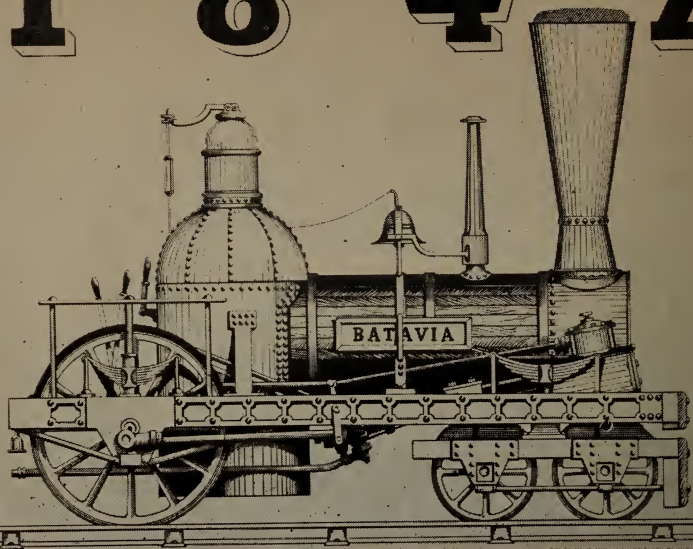


Photo: Courtesy N. Y. Central System

One of the first locomotives built in America. It was completed in 1838 by the Rogers Locomotive and Machine Works, Paterson, N. J., for the Tonawanda Railroad. The form of firebox shown here, semicircular at the rear part with a hemispherical top surmounted by a dome, was used as late as 1857. The Batavia was typical of early railroad technology. It was good enough for grandpappy's time. Today it wouldn't even be capable of switching freight cars around a small town siding. Good old Batavia.



Photo: Courtesy The Pennsylvania Railroad

Here's the latest in railroad technology, two way electronic train telephones, not straight radio. It permits talk at will between locomotive and caboose, between trains miles apart and with distant block operators. The carrier current system is used. The current jumps the distance from rails or wire to the receiver it is intended for. Others are not affected. It was installed recently on a branch of the Pennsylvania R.R. Technology deflates the factors of human error and ego. Hurrah!



Photo: Courtesy Anheuser-Busch

Up the Missouri by steamboat to Independence, then over the Oregon Trail by oxcart and covered wagon. Pioneers followed the Platte River to Fort Laramie; through the South Pass and along the Sweetwater to Fort Bridger; then via Fort Hall along the Snake River to Whitman Mission; and down the mighty Columbia by raft to the valley of the Willamette. Four months of polding across half a Continent.



Official U. S. Navy Photograph

Men are still living who made that laborious journey. Now we can make the same trip in a handful of hours. Here is air freight in the making, the RBI Flight Ship, Conestoga. It serves as an ambulance or freighter. These two pictures typify the speed of America's progression, and the distance covered, from the oxcart age to the Power Age. It was done in the span of one long lifetime.



Photo: Courtesy Houdaille-Hershey Corporation.

The ice harvest of yesterday was characterized by human toil and hand tools. In 1943, 11,000,000 American homes used 9,000,000 tons of ice. Industry used 31,000,000 tons. The old method is inadequate today. The first ice making plant was built in New Orleans in 1868. In 1942 the industry employed a peak of 150,000 workers. It used energy equivalent to 1,380,000,000 workers, or 138,000,000 horsepower. Pay-rolls represented 48.28 percent of all operating costs; power supplies only 10.4 percent.



Courtesy of York Ice Machinery Corporation, York, Pa.

The ice harvest of today goes on all the year around. America's 6,500 ice plants have a daily capacity of 298,000 tons of ice. Operating at less than 40 percent of capacity in 1943 they produced 40,000,000 tons. Some items used are: over 70,000 motor trucks and cars; 83,000 electric motors; 12,000 ammonia compressors; 360,000,000 pounds of salt and calcium; 15,000,000 pounds of ammonia; 21,000 miles of pipe, etc. Total installed horsepower of primary and secondary movers is over 1,000,000.



U. S. D. A. Photo

Carry me back to—what? Human toil and hand tools? Here the hands are the tools. Cotton is the largest employer of agricultural labor. Up until recently King Cotton has defied mechanization. Cotton picking is the greatest single source of women and child labor in America. There are about 9 million people in the 2 million tenant families of the 10 cotton states. Their lot is largely spent in raising and picking cotton. It's a tough life, but technology is making it easier. Oh Happy Day!



Photo: Courtesy International Harvester Company

This mechanical cotton picker will pick as much cotton in one day as 70 men. At present wages rates it costs about \$30.00 to pick a 500 lb. bale of cotton. This machine cuts that cost to about \$1.00 a bale. Figuring overhead, amortization, depreciation and downgrading caused by dirty cotton the saving is at least \$20.00 a bale. 'Weep no more my lady—.' You will soon be released from the bondage of toil and scarcity. Politics can't do it; but technology is making it a categorical imperative.



Photo: Courtesy Bethlehem Steel Co.

Remember the Village Blacksmith? That was in the 'good old days' of human toil and scarcity. Not that scarcity isn't still with us, but the toil is disappearing fast, and some day soon we are going to run out of scarcity. Here's a giant press forging a heavy slab of battleship armor. What power and technology! See the men hard at work watching the press work. That's the proper spirit.



Official Photo U. S. Air Forces

The type of social progression we have been illustrating is unknown in China. There they still operate as did their honorable ancestors thousands of years ago. Human toil and hand tools are the only methods the oriental has available; consequently he has scarcity. Here they reduce stones to a useable size with hand hammers, in building a B-29 base. Not much skill needed here, it's true; but what a lot of man-hours and low scale of production. You can't produce abundance with scarcity methods.



Signal Corps Photo

'Perplexed no more with human or divine, Tomorrow's tangle to the winds resign.' Thus opined Omar Khayyam, the astronomer-poet of Persia, over 800 years ago. Nothing much has changed in that country since then. It is still a land of human toil and hand tools, plus plenty of opinions. Here, laborers of the Persian Gulf Command, U. S. Army, unload American flour on its way to Russia under lend-lease. U. S. Army operated the Iranian R.R. between the Persian gulf and Soviet supply depots in the North.



Kansas City Star Photograph

Automatic lift unloading new wheat into bins. The loading car is tilted to a 45 degree angle and the wheat pours out. The operation takes about a fourth of the time required by the old method. The U.S. shipped food to American fighting forces and their allies in 56 theaters of war. In 1943 we raised 50 percent more food on 2 percent less acreage with 10 percent less farm labor than in 1918.

From the Camera's Eyeview

The Achilles' Heel of Technology

The Weakest Link Is The Strongest

Achilles was an ancient Greek hero whose exploits in war were written up by Homer, about 900 B.C. He was reputed to be physically invulnerable except in one place. According to the story, his mother had dipped him, while an infant, into the River Styx. This immersion rendered him invulnerable except in the heel by which she had held him. After many adventures, Achilles was killed, at last, by a wound in the right heel.

This story is a part of elegant literature, a myth. But it has a point worth considering. There is a similarity of a sort between the invulnerability and weakness of Achilles and the invulnerability and weakness of modern technology in America. In most respects, technology seems 'invulnerable' but it is utterly dependent upon a slender thread of precise adjustment and control. Technology is tenuous.

Electric power comes in over a thin wire. Shut off that flow and you convert the finest industrial plant in the country into a pile of junk, fit only as a nesting place for birds and rats. Stop the flow of power to our big cities and they become smoldering morgues for millions of people in a few days. Drop a few dozen blockbuster bombs in the railroad yards at Chicago, Kansas City, and a few other points and you disrupt a Continental transportation system. Manufacture, transportation, communication and agriculture are basic in America's technological structure. Unless they function smoothly, social welfare and public health decline toward zero and education is a useless pretense. First things always come first.

The greater technology becomes under the Price System, the easier it is to destroy. This paradox is a result of the clumsy interweaving of some physical laws with the Price System of trade and commerce and the exclusion of many more important ones because their adoption would invalidate the entire status quo.

What Color Is A Chameleon?

Industrially, technology is the application of physical laws to the production and distribution of goods and services. Socially, it is adaptation of the social structure to the verities of the physical world in which we live, and obedience thereto. The Price System is the devious, opportunistic methods of the institutions of business, finance and politics, while its social structure is the reflection of a hodge-podge industrial system that grew up out of mercenary instincts developed to a pathological degree by long ages of scarcity. Technology and the Price System are incompatible in the nature of things. Here is the focal point of social instability in the Price System and the source of technology's weakness today.

The average American is interested mainly in how much he can chisel out of society and how little he can get away with giving back in return. There is scarcely any social morale in this land, except in the Armed Forces, which is not interpreted in terms of personal gain. Our mixed-up culture of technology and chiseling Price System methods has reached a point of development wherein its operation and safety is dependent upon an ever-increasing number of physical factors. As social instability grows and social morale sinks lower, technology becomes ever more tenuous.

The Achilles' heel of technology is social violence. It must be strictly tabooed. Should internal strife occur, it will result in a major social catastrophe. There must be no reduction of America's great technology. Any party or group advocating social violence as a solution of America's problems is guilty of Continental treason. Amidst all the organized confusion in America today there is only one program that will make social violence unprofitable for any party or group; that will provide individual security through collective security; that will heighten social morale through a common objective; that will thus free technology from its tenuousness and guarantee the greater future of America. That program is **TECHNOCRACY'S VICTORY PROGRAM OF TOTAL CONSCRIPTION OF MEN, MACHINES, MATERIEL AND MONEY, WITH NATIONAL SERVICE FROM ALL AND PROFITS TO NONE.**



World Wide Photo

Laying a pipe line to carry the oil of Iraq to ports on the Mediterranean. The source of power used here is human labor. There are about 24 men at work on this job, totalling a little more than two horsepower of energy. Notice the small pipe, the shallow trench, the hand tools and the obvious air of human toil. The low order of magnitude of operations shown here is normal to most of the world outside America. The problems involved here can be solved with a 'Heave Ho!' and a couple of grunts.



Photo: Courtesy Caterpillar Tractor Co.

In this scene there are only half as many men but a lot of machinery. The prime movers shown total hundreds of horsepower of energy. The ditch is wider and deeper than in the first picture; and the pipe is twice as large. Notice the tractor driver taking it easy and the general absence of human toil. Yet here is a dynamic scene depicting a high order of magnitude of operations; power, speed, efficiency. Problems here can only be solved by following the design of the job and the mechanisms employed.



Photo: Courtesy General Motors Corporation

This 14 spindle vertical machine designed for chambering barrels on 20 mm anti-aircraft guns replaces 10 screw machines formerly used. It reduces machining time from one and one-quarter hours to four minutes. A great deal of training, knowledge of physical laws and industrial processes has gone into the design of this assembly. It displaces the skill of 10 operators and produces 19 times as much finished work. It is a complex, efficient machine, yet it is easy to destroy.



Photo: Courtesy Monsanto Chemical Company

If you got the idea in the first picture you will be able to see how it is carried further here. This is the control room in the dehydrogenation unit at the Texas City, Texas styrene plant. Styrene is one of the raw materials essential to making Buna-S synthetic rubber. On this panel remote from the actual operations, the most minute variations in the flow line are recorded and adjustments made. Complex skills are reduced to a matter of automatic recording and simple adjustment, by precise control.



Photo: Courtesy General Motor Corporation

This huge multiple tool drills hundreds of holes simultaneously in the heavy armor plate of war tank transmissions. Absolute precision prevails here. Every hole **MUST** be in the right place. It's amazing how quickly these hundreds of holes are drilled, once the job is all set to go. Think, how long and arduous this task would be if each hole had to be drilled separately, by hand. Operations like this can't be done by guess and by gosh. They must conform to the technological principles involved.



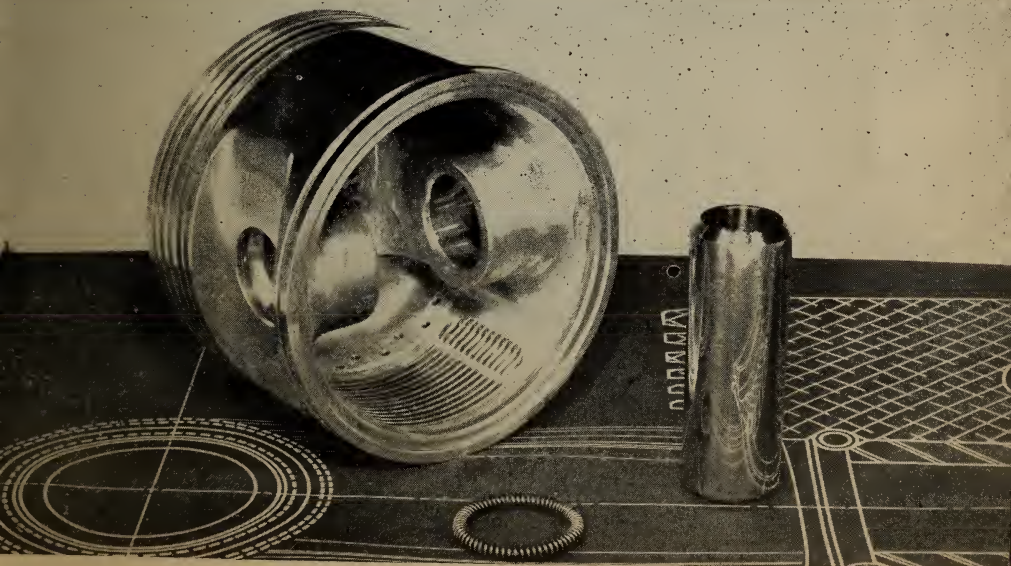
Photo: Courtesy General Electric Company

Here is the assembly line at the Fort Wayne turbosupercharger plant. An airplane engine must have oxygen in order to operate. The turbosupercharger scoops in and compresses the rarefied air of high altitudes. Operation is both directly from the crankshaft by a system of gears and by using the hot exhaust gases of the engine. The turbosupercharger provides near-sea-level air pressure to the motor, making high altitude performance possible. Here it is again: control, stability, tenuousness.



Only 1/15th the size and weight of the average 3 hp. motor this mighty 7 lb. midget develops the same horsepower. It operates at 120,000 rpm, 2000 every second. This is 65 times the speed of the average 3 hp. motor, or 13½ times the speed of sound. It is water cooled, consuming ½ gallon per minute. Oil-mist lubrication type bearings are used. If automobile wheels could turn at the same speed, cars could travel 10,000 miles per hour or 165 miles a minute. Wow! What's next?

Photo: Courtesy General Electric Company



An example of advanced technology. The mirror-like surface of this Cyclone part has a maximum deviation of 8 micro-inches, or 8/1,000,000 inch. Total area of any superfinished part has a maximum deviation area is increased due to greater area of contact per square inch. This gives greater tensile strength, greater resistance to corrosion, longer life, better operation.

Photo: Courtesy Wright Aeronautical Corporation

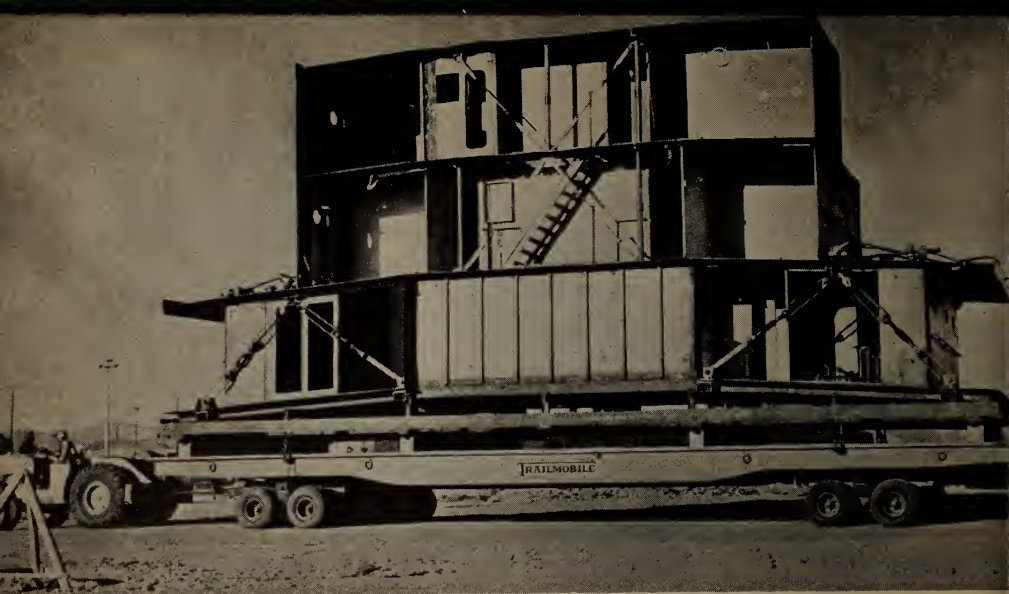


Photo: Courtesy The B. F. Goodrich Co. and The Trailer Co. of America

Delivering Victory ships in 150 ton slices. The pre-fabricated part is as high as a house and as long as a flatcar. How many horses would it take to pull this load? It would require ten times as many men as horses. The American method is to use energy and technology, not human toil and hand tools. Cut off the energy or disrupt the technology and we go back 200 years.



Photo: Courtesy Bethlehem Steel Co.

Here is something else new in America. As technological methods become more complex it will become necessary to enroll more and more Americans into the orbit of technology. These untrained people, negroes and whites without discrimination, are being taught the fundamental physical principles of industry. It is a class in electricity. Once conditioned to the scientific approach to industrial problems it won't be quite so far to the idea that social problems also are amenable to the methods of science.

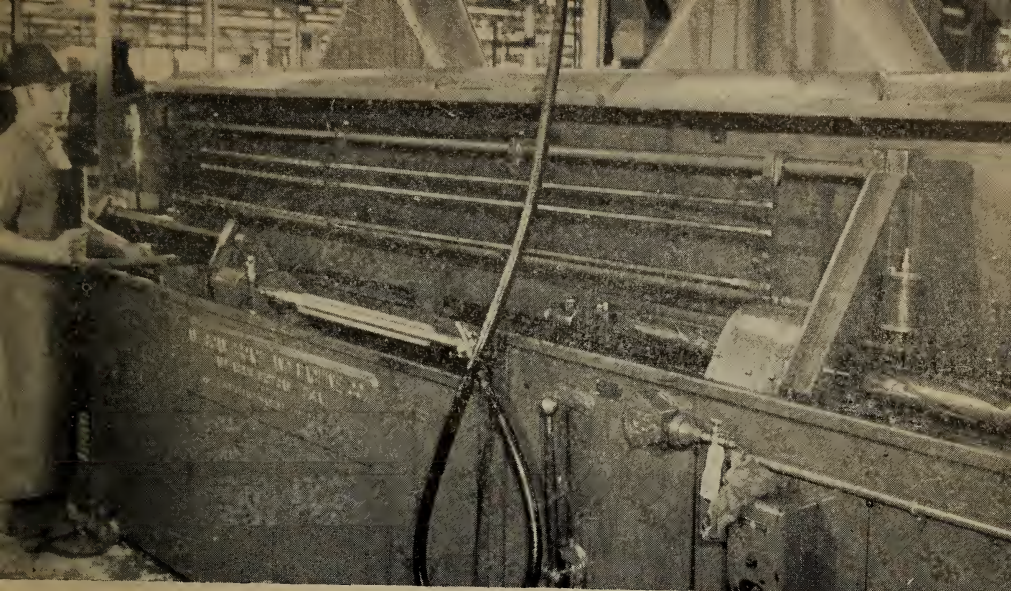


Photo: Courtesy General Electric Company

This is a broaching machine working on 20 mm. anti-aircraft gun barrels. It draws four broaches, each one slightly larger than the one before it, through the barrel and also cuts the nine rifling grooves simultaneously. This machine reduced a one and one-half hour operation to 12 minutes. Man-hours per unit must decline. Basic machines produce basic effects industrially and socially. Do you see?

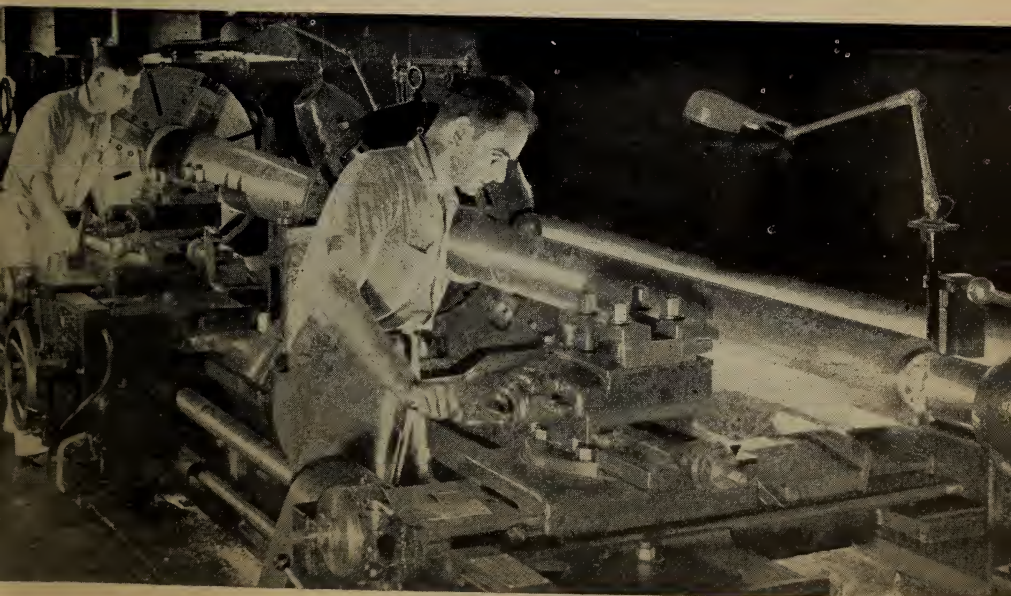


Photo: Courtesy General Electric Company

Here is a giant two-man lathe machining the barrel for a 90 mm. gun. This piece requires the use of 353 other machine tools. Such tools lie at the base of industrial production. If machines make jobs, as some dithyrambic advertising writers assert, why was there no disemployment prior to the machine age, say 1910 A.D.? Why is the death rate of old jobs rising faster than the birth rate of new jobs?



+51689

Official Photo U. S. Air Forces

USAAF aviation engineers, building B-29 bases in China with native labor. Men, mules, carts, wheelbarrows, shoulder baskets, toil and sweat. That's the Chinese way of building a landing field. 10,000 human laborers can do only as much work as TEN 100 hp. engines operating modern earth-moving equipment. The rate of energy conversion in China is extremely low. In America it's very high.



Photo: Courtesy Caterpillar Tractor Co.

Here's the American way of constructing a landing field. The engines shown here probably have more power than the entire army of men shown in the previous picture. On this field at Johnstown, Pennsylvania, Caterpillar Diesel D8 Tractors with LaPlant-Choate scrapers moved 1,000,000 yards of earth one half mile. They worked 23 hours a day and each tractor used $5\frac{1}{2}$ gallons of 7c fuel per hour.



U. S. Army Signal Corps Photo

Here are some wrecked Jap power installations on Kwajalein Atoll after the 7th Infantry Division U. S. Army took over on January 31, 1944. The tenuous line has snapped under the impact of a superior technology bent on destruction. In these pictures some paradoxes of technology are illustrated. What applies to one, or a series of advanced technological mechanisms, applies equally to a social system that has become dependent upon technology and the conversion of extraneous energy for power to operate.



Photo: Courtesy West Coast Lumbermen's Association

'This is the forest primeval.' Virgin timberland in Oregon. In this raw physical environment it is hard to survive and prosper by human toil and hand tools alone. Under Price System operations social stability is extremely tenuous and easy to wreck. Destroy America's technology and the few survivors go back to nature's first principles. A technological society is easy to control by technological methods. Social stability comes from collective social interest. Social violence is TABOO in the Power Age.

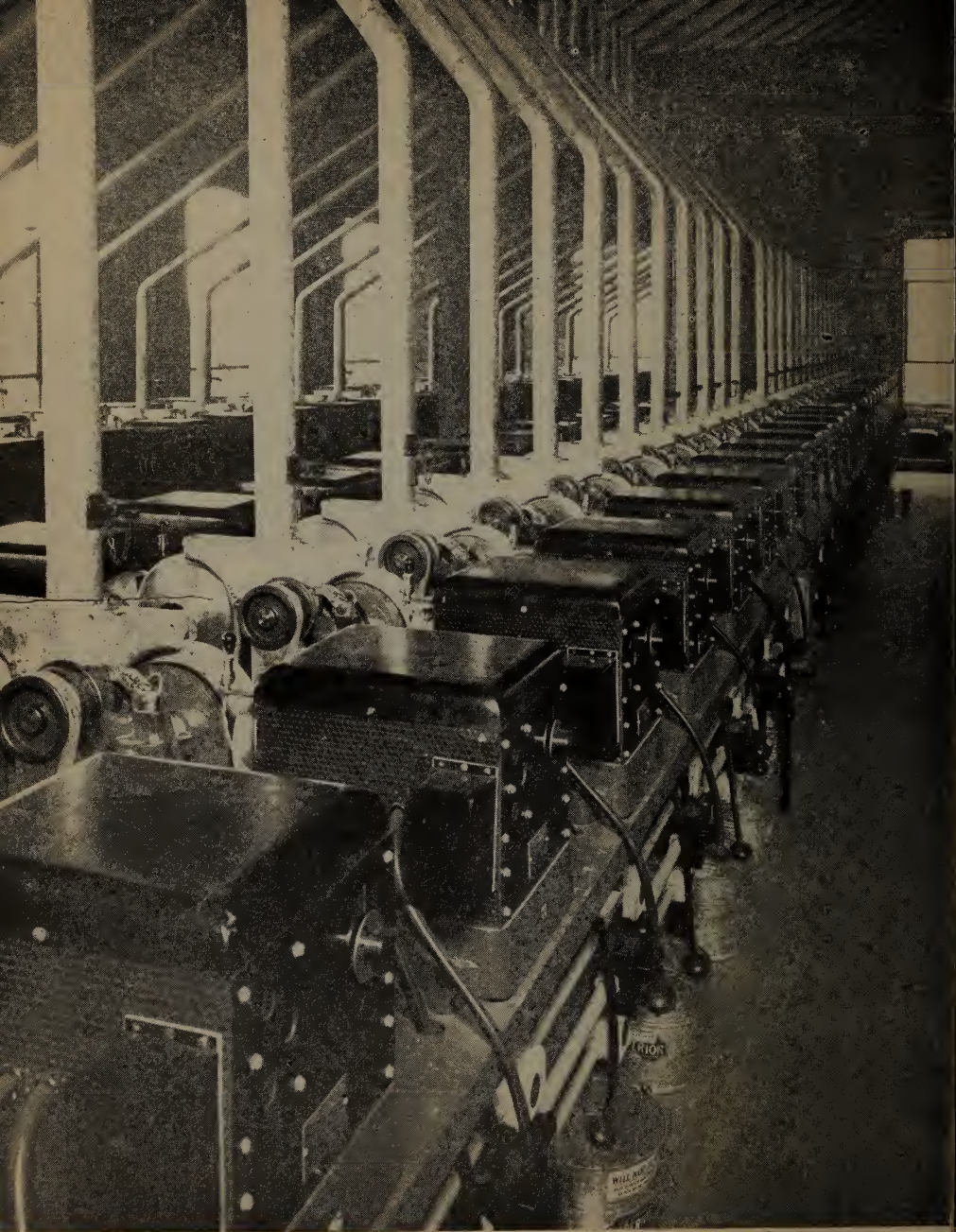


Photo: Courtesy General Electric Company

Here the technological process of reducing labor and skill to simple operations is carried to its ultimate development. This is a battery of photoelectric-thyratron bean sorting machines in action. No human attention is required except for maintenance. The process is fully automatic. The beans pass before electric eyes. The white beans get by but the discolored ones are flicked into a reject chute by metal fingers. A fine watch is a very intricate mechanism but even a moron can wind it up.

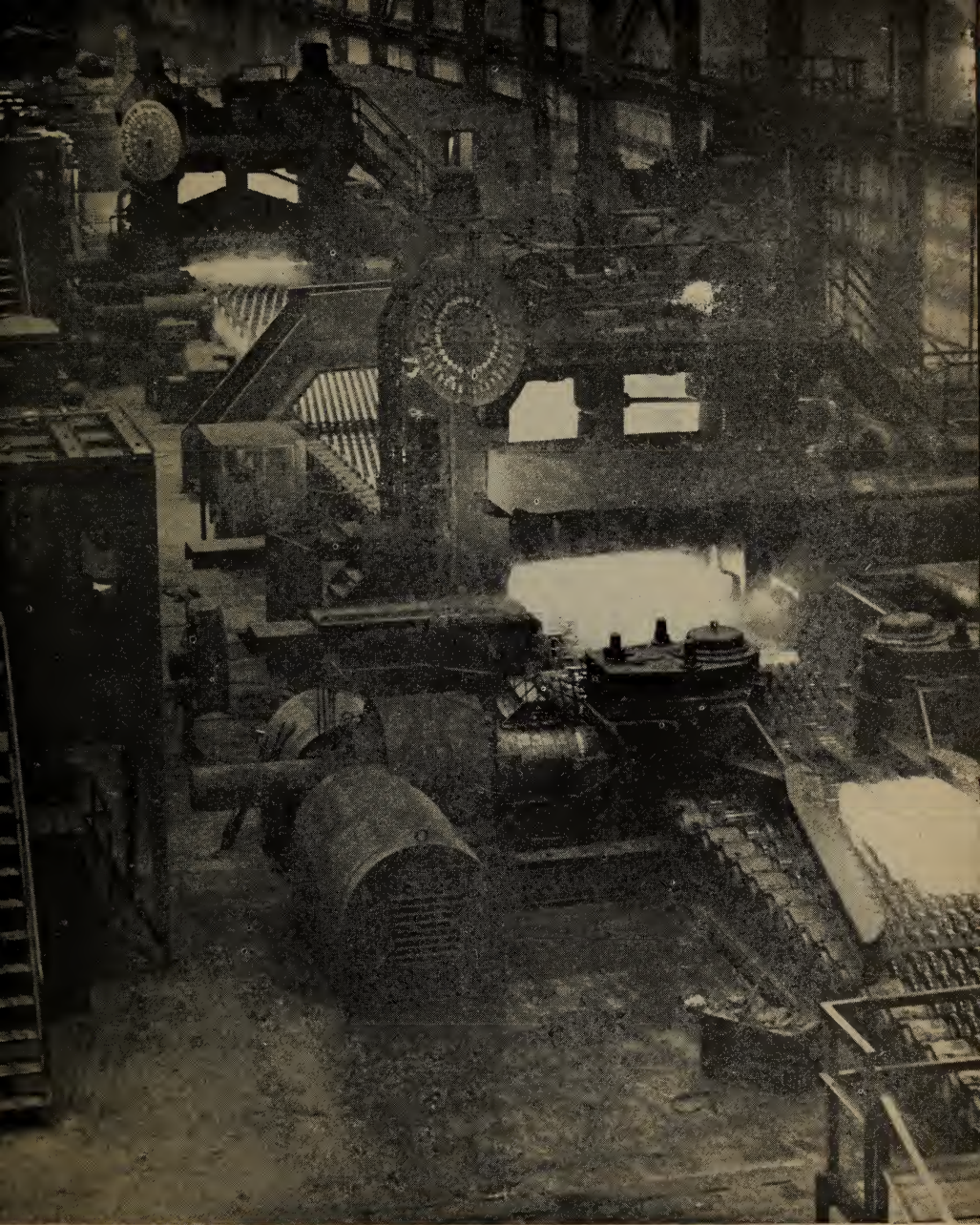


Photo: Courtesy Kaiser Company Incorporated

This plate rolling mill at Fontana, California, is rated at 300,000 tons of ship plate a year. You can count the number of men attending this installation on the fingers of one hand. Massive assemblies like this are fundamental and prior to most other industrial production but they are just as dependent on precise control. The power to energize them comes in over a thin, flexible wire, symbolizing the thin line of demarcation between advanced technology and the crudity of human toil and hand tools.

From the Camera's Eyevlew

Technology Goes To War

'There Was The Door To Which I Found No Key'

It has been said that man is the only animal that wages war upon his own kind. Whether this is so or not it is a fact that the history of war is as old as the written records of mankind. The Supreme Court of the United States once defined war as 'every contention by force between two nations in external matters, under the authority of their respective governments,' (Bas. v. Tingy, 4 Dallas, 37).

In ancient literature we can read the story of Numa Pompilius (714 to 672 B.C.), the second King of Rome. During his reign, he had a shrine built to the pagan God Janus, the God of gates and doors. Pompilius specified that the gates of the temple should be kept open whenever Rome was at war and closed when peace ruled over the city. Existing records show that between 672 B.C. and 14 A.D. the gates were closed only four times, for brief periods. As a matter of record, since 1600 B.C. up to now the world as a whole has experienced less than 330 years of peace.

There is something symbolic in the specification that the shrine of Janus should be open to the people only in time of war. Perhaps it was symbolical of the fact that the 'glory' of war was the only event making escape from the grinding life of toil and scarcity possible to mankind in that day and age. In war the gates of adventure opened wide and men could march off to loot, rape and kill 'under the authority of their respective governments.'

When peace descended again upon the land and the adventurers returned home to the boredom of social conformity, they found the gates to the Temple of Janus closed, symbolizing their reimprisonment within the structure of a social system based on human toil, hand tools and an everlasting hand-to-mouth scarcity.

Today the framework of a high energy civilization is evident on all sides. Warfare, now, is waged with the tools of social change. By this we mean that the processes and mechanisms introduced during the war have a terrific impact upon the social structure when it contracts into a state of peace. The factors of social change grow steadily more portentous. And, what is the social picture today? Nearly all our 'best minds,' our 'statesmen,' our 'tycoons' of industry, our 'leaders' in education and the professions and all the 'respectable' and 'nice' people of the 'better classes' are sound asleep. They view the social problems of today within the context of events that occurred a thousand years ago.

'—No Less Renown'd Than War'

But, after every war comes a peace. Then, symbolically, the gates of Janus swing closed. Then, soldiers return home, war industries close, war workers cease working at war work. Then, private enterprise must, perforce, return to its time-tried rackets. Then, it will again have the freedom it is forever bellyaching about to demonstrate for the umpteenth time its functional incompetence to distribute an abundance. Then all the human components of the land will be reimprisoned within the stifling framework of a social system, dependent on technology and extraneous energy, but operated by handicraft-agrarian methods handed down from the time of old King Pompilius. When peace again descends upon this fair land, the impact of technology will be reversed, like a boomerang, from the open door of war, and directed with shattering force upon the social structure at home. The compulsion for social change will descend upon America with cataclysmic certainty.

As sure as the sun will rise above the eastern horizon tomorrow morning, the trend of physical events instituted by science and technology, its pace and power accelerated by war, will proceed inflexibly to its rendezvous with this generation of Americans. There is no escape for us from that fact. Total war will either be followed by total peace or social disintegration. The signs all point in one direction. The tools of social change are sharp and they cut both ways. America must be prepared with a program in harmony with the trend of events.

Law of the Jungle

The average American soldier is as courageous as the soldier of any other nation, and in most instances far more adept and resourceful. When it comes right down to cases, he is not afraid of anything that may happen. He can take it as well as dish it out. On dozens of war fronts all over the world, such Americans are united as never before in the history of their country.

On the home front other Americans are also united as never before in the history of their country. But this unity is of a different color than that exhibited by G.I. Joe. The American soldier has surrendered his constitutional privilege to pursue individual and economic gains, for the duration. He is enrolled in National Service. The American citizen in the civilian economy has not surrendered anything. He is riding a high tide of economic prosperity. He is enrolled in Individual Service.

Here we have two clashing behavior patterns. The soldier in National Service is dedicated to the country as a whole. The civilian in Individual Service is dedicated to personal gain. Except for a few patriotic Americans, the home front is a unity in rejecting all suggestions that would put civilians on the same basis as the Armed Forces. Every minority pressure group in the land is scheming to further enhance its differential advantages at the expense of the majority, which includes all other minority pressure groups.

G.I. Joe knows all this by rote. He ought to because he spent all his life as a part of that economy until he went off to war. He also learned much from his father who fought in the first World War and was promised a postwar world 'fit for heroes to live in.' Finally, he remembers the 'heroic' feats of deprivation by which his family was able to survive the Great Depression. The soldier knows that the war will end some day and he will return home again to a competitive economy. He knows that the Rules of the Game of the Price System require him to chisel a 'place' for himself or be disinherited as an economic outcast from society.

Americans Fear Only Americans

The American soldier knows that many, if not most, civilians have been doing rather well for themselves since the war began. He knows, or thinks, that they are intrenching and consolidating their economic positions while he is away. And, he thinks that he will be at a disadvantage in spite of his so-called 'Bill of Rights' and all the political schemes to assist him. Here is the only thing the American soldier fears. He is afraid of his fellow Americans and of the postwar era. This is the source of his distrust of civilians.

In return, the civilian distrusts the soldier. He is afraid that G.I. Joe will take his job away from him; or chisel into his business when the war is over. He is afraid that the returning soldier will get a preferential advantage denied him. The civilian supports the war to the extent that the Rules of the Game of the Price System permit. But the same Rules dictate that he must provide for his own postwar position. The Price System guarantees no citizen anything, except the opportunity to exercise his mercenary instincts. The penalty for non-compliance is want and poverty in the midst of plenty.

The Price System regiments its human components into compulsory economic and social hostility against each other. That is how it operates. Is it any wonder that America is a welter of social confusion? The confusion is organized. Is it any wonder that Americans are afraid of each other and the postwar period ahead? The wonder is that we have done as well in this war as we have. The answer is not to be found in the ethics, morals or principles of the Price System, if any. It resides in the Great Technology of America, grown to maturity in the Power Age.

For the first time in history, we must prepare for peace in time of war. This can only be done by the installation of an overall design of National Operations. There is such a blueprint ready and waiting to be installed. It will guarantee a secure postwar position for every citizen, soldier and civilian alike.



Official U. S. Navy Photo

The technological character of this war is illustrated by the special types of ships required to transport men, machines and materiel. The landing craft LST pulls up to shore, two big doors open, a ramp is lowered and the half tracks, tanks and trucks roll out. LST are built at shipyards along inland rivers and Great Lakes ports. At Attu, Kiska, New Guinea, Rendova, Sicily their gaping jaws have opened wide.



Photo Courtesy Pennsylvania R. R.

75 trains! It must move as a unit—trains follow one another a few minutes apart. A modern division consists of more than men alone. There is also tanks, armored cars, tractors, artillery, anti-aircraft guns, etc. This is a technological war! Transportation is the keystone of logistics. This is the engineering job of getting supplies to the right place at the right time in the right amount.

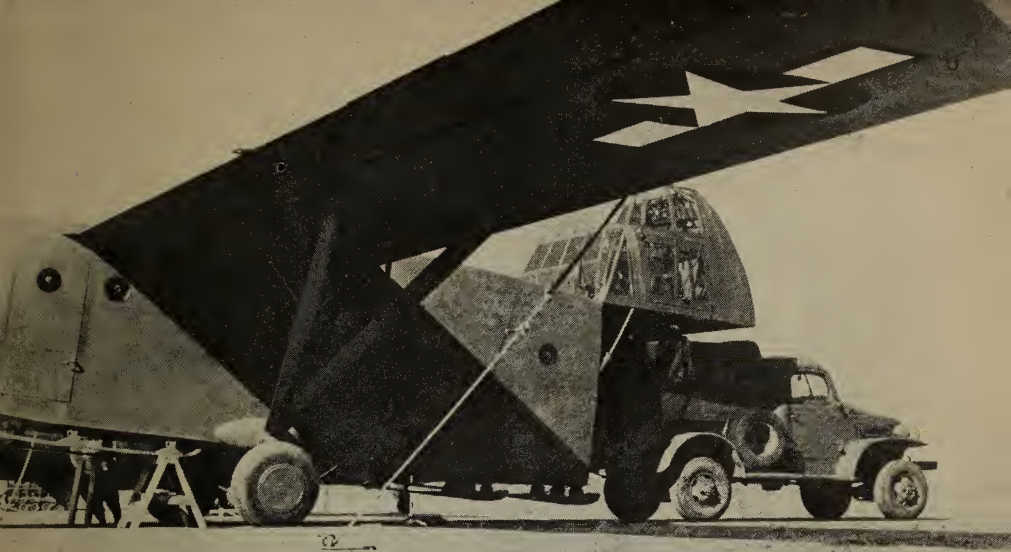


Photo: Courtesy U. S. Army Air Forces

Literally riding on the wind. The Army's newest glider YCG-13. It will transport more than 24 infantrymen with full packs, mortars and machine guns. Two jeeps with their crews or a medium truck with accompanying equipment may be loaded and unloaded through the nose. The YCG-13 is now in mass production for the Air Force Troop Carrier Command. It weighs about four tons empty, and is built largely of plywood. On the sea and in the air, technology is everywhere. Ubiquitous is the word.



Official Signal Corps Photo

This new Army combat reconnaissance car M8, designed by the Ordnance Department, combines the speed and maneuverability of an automobile with the punch and armored protection of a light tank. The M8 weighs 8 tons and is capable of high speed over rough terrain. It mounts a 37mm cannon and a 30 caliber machine gun. Notice the low silhouette and high ground clearance. The tough front end simply pushes down and rides over underbrush and trees. A crew of four handles the M8.



Photo: Courtesy United States Rubber Company

Oil-resistant synthetic rubber lifesaving suits marching off the production line. To the Merchant Marine they come in mighty handy sometimes. The drawstring closure at the top (head covering not shown), keeps it snug at the neck, leaving only the face exposed. The harness device around the waist is to lift oil covered seamen from the water. Made of one piece they keep the wearers dry. Buoyancy is supplied by a life vest worn underneath. On the land and on the sea, technology hastens victory.



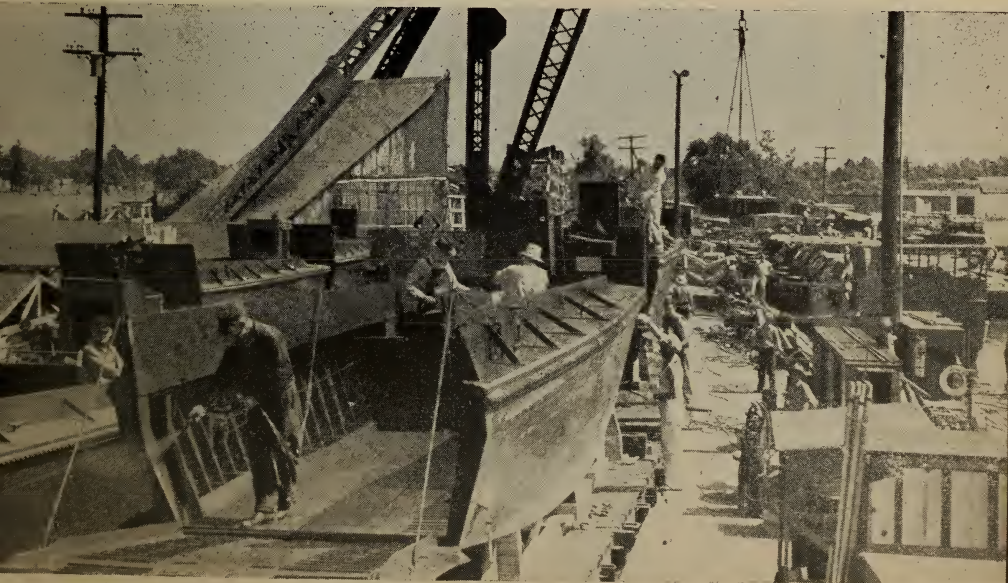
U. S. Army Signal Corps Photo

Then we have the army's amphibious trucks called 'Ducks.' They haul $2\frac{1}{2}$ tons of supplies, are propeller driven in the water and have six-wheel drives which carry them at high speed on land. They are designed for putting men and supplies at ordinarily inaccessible spots, supplementing LST. They hit the beach and keep right on going. America wages war with the tools of social change. The more the better. Catch on?



Photo: Courtesy United States Rubber Company

Technology smooths the way with an immense three dimensional terrain model at Attu Island in the Aleutians. Seizure of the island was preceded by a study of the model. These collapsible rubber contour maps are based on aerial photographs, reconnaissance reports and pre-war maps. Technology reduces the cost of invasion in toil and lives. The greater technology becomes the higher goes the production ability, the lower goes the scarcity, and the more the Price System muddles around. Catch on?



Official OWI Photo by Hollem

Here is a new industry for war. Fitting and painting 36 foot wooden ramp boats at a southern shipyard. These carriers are built of prefabricated sections. The completed boats are launched by a crane. They are used for making beach landings of men and equipment. Amphibious warfare in the Pacific, with its island hopping and by-passing, requires equipment never made before. Necessities of the job dictate the material needed. Modern wars are waged with the tools of technology.



Photo: Courtesy Province of Quebec Publicity Bureau

Here is a different kind of flying. Towed by a twin-motored Dakota these R.C.A.F. officers recently made the first glider flight across the Atlantic, from Montreal to England. Glider trains are being talked about for post-war use as freight trains of the sky. It's simpler to build giant Flying Wings. They'd require less man-hours per ton miles of freight hauled. Who wants to work anyhow?

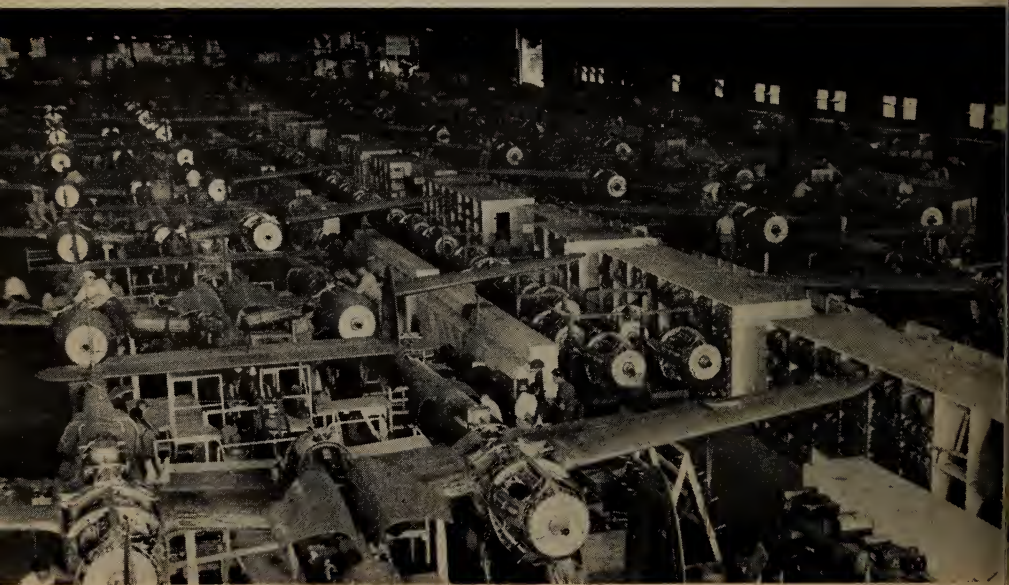


Photo: Courtesy Lockheed-Vega Corp.

The P-38 is produced on a continuously moving assembly line. The installation of this line required eight days but it doubled the plant's output and resulted in a 40 percent reduction in man-hours per plane. Sub-assembly lines carry engines and parts to the main line. Workers ride the ships as the line moves along. Maximum production involves maximum technology and minimum man-hours of labor.



Official Photo U. S. Air Force
 Icarus flew too near the Sun, the wax of his wings melted and he was drowned in the sea. So goes the Greek myth. Not so with these B-17 bombers of the U. S. Army's 8th Air Force. Caught in the rays of the sub-stratosphere sun more than 16,000 feet above the North Sea the camera transfixed them on film. The weird cloud formation shown beneath seems like the frozen surface of a dead world. The Flying Fortress is a good plane, but the Flying Wing will fly 5 times as far and carry 5 times more bombs.



Photo: Courtesy U. S. Army Air Forces
 A waterproofed jeep undergoing tests in a stream. The jeep was not waterproofed with anybody's opinions, but with an asbestos compound applied to vital parts. There is a formula ready for protecting America's social structure against postwar collapse. It was compounded from a physical appraisal of American history and a scientific analysis of her social problems. The formula is Total Conscription of Men, Machines, Materiel and Money, with National Service from All and Profits to None.



Photo: Courtesy General Motors Corporation

'Lay that carbine down babe, after you've inspected it.' This short, light, deadly weapon (we mean the gun) weighs less than $5\frac{1}{4}$ pounds and is replacing side arms and rifles in jungle and invasion fighting. It's the U. S. Army's new M-1 30 cal. all-purpose carbine. As weapons become more efficient they tend to become smaller and lighter with greater power. That's almost a rule for all mechanisms.



Photo: Courtesy Caterpillar Tractor Co.

Diesel bulldozers, scrapers and earth movers, clearing a landing field somewhere in the jungles. Models in use close to the fighting front have armored cabs for the operator. American technology follows American soldiers on dozens of war fronts. Japan hasn't got a chance against the stuff shown in these pictures. The oxcart age is gone in America but oxcart thinking is still with us.

'Free Enterprise' or Free Technology

Diagnosis and Prognosis

by The Peripatetic Technocrat

DIAGNOSIS

'Free Enterprise' Means:

Freedom to conduct a system of trade and commerce solely for the exchange of commodities, on the basis of scarcity determined values for a profit; without regard to distribution;

Freedom to exploit the natural resources of this Continent and its public collectively for all the private profit the traffic will bear;

Freedom to permit America's No. 1 natural resource, the land, to be eroded and lost in the oceans by unscientific agricultural practices, under-reforestation and over-logging;

Freedom for all minority pressure groups to wage political and economic conflicts for preferential advantages at the cost of other minority groups and the general welfare of the whole;

Freedom to maintain monopoly controls in order to hold up prices and enforce scarcity on the great majority;

Freedom to bury patents, inventions and processes so that industry will not become too efficient;

Freedom to permit criminal waste in industrial and agricultural operations in order to increase profits;

Freedom to manufacture shoddy goods so they will wear out faster and have to be replaced oftener;

Freedom to permit special privileges to the favored few, while enforcing social regimentation upon the great majority;

Freedom to poison the wellsprings of public information by suppressing and distorting the real news and emphasizing transitory and superficial happenings;

Freedom to carry on a conspiracy of silence against the design of a scientific social system that can produce and distribute abundance and security to all citizens and provide maximum defence for this Continent;

Freedom to oppose every governmental measure intended to enlarge the common welfare, which might restrict special privilege;

Freedom to carry on business as usual and exact a greater profit than usual while the country is at war;

Freedom to make cartel agreements with enemy nations even though such agreements endanger the security of the homeland;

Freedom to create ever higher mountains of public debt for the sole purpose of maintaining a system of private profit and privilege; and

Freedom to propagate the appalling, asininity that 'FREE ENTERPRISE' means anything else except the clauses contained in this analysis.

PROGNOSIS

Free Technology Means:

Freedom to realign the social structure in conformity with physical laws, so that the industrial system will be geared to abundance and distribution on the basis of physical cost;

Freedom to guarantee economic security to all citizens from birth to death as a right of citizenship;

Freedom to conserve the natural resources of this Continent and advance the general welfare of its people collectively by all the means that science knows;

Freedom to abolish the waste of human talent and ability by opening all avenues for its expression;

Freedom to technofacture superior goods, so they will last as long as possible and not have to be replaced often;

Freedom to abolish special privileges to a favored few by creating a setup wherein voluntary acceptance of scientific controls will be acceptable to all;

Freedom for each individual to be rewarded with social prestige and position commensurate with his social accomplishments;

Freedom to keep the wellsprings of public information untrammelled and uncontaminated, so that all citizens will be aware at all times of the occurrence and meaning of physical events and trends in all parts of America and the world;

Freedom to enact a new contract of citizenship as the basic law of the

land, wherein class favoritism will be outlawed and servitude to private masters made impossible;

Freedom to protect and enhance America's No. 1 resource, the land, by engineering with nature so as to restore dynamic equilibrium between croplands, forests, water flow and the underground water table;

Freedom to construct an all-Continental inland waterways system for low-cost transportation of bulk freight; and to build thousands of earth dams in order to control the run-off of water;

Freedom to build an all-Continental system of super-highways for rapid and safe transportation;

Freedom to eliminate public and private debt by using a medium of distribution which makes the creation of debt impossible;

Freedom for all Americans to participate equally in national service in time of war, unrestricted by economic pressures so that no citizens can get richer in any way while blood is being spilled in defense of the country;

Freedom to provide the maximum defense for this Continent by building up its military, naval, aerial and coast defenses to unsurpassed strength and organizing them along technological lines according to their respective functions;

Freedom to liquidate pro-fascism at home as being Continental treason and contrary to the future destiny of America as a whole.



U. S. Forest Service Photo

Here is something memorable accomplished by the unrestricted exercise of opinions. Timber cut or destroyed in 1943 was 50 percent more than total growth. The volume of standing saw timber in the U. S. has been reduced by 40 percent in the last 35 years. The 'right' of 'free enterprise' to denude the nation's forests is intimately related to our disappearing top soil and to the diminishing quantities of available fresh water in many communities. Waste not, profit not. That's good business in our time.



U. S. Forest Service Photo

Modern industry depends on water. The Water Resources Branch of U. S. Geological Survey is calling attention to the falling underground water table; the Forest Service points to our disappearing forests; the Soil Conservation Service complains about land erosion. But, 'free enterprise' continues to sabotage the nation's future economic life. This scene shows what can be done in proper cutting and reforestation. Opinions or facts; philosophy or measurement; deserts or fertility, take your choice.

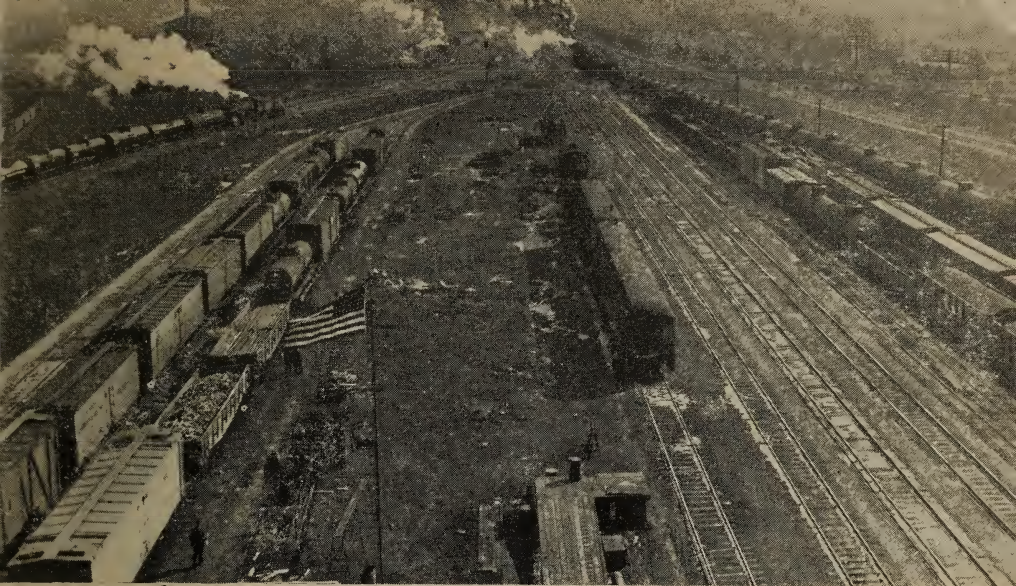


Photo: Courtesy Erie Railroad Company

Oil trains forming in the yard at Marion, Ohio. Almost 1,000,000 barrels of oil are moved every day by the railroads. In 1918 they hauled 405,000,000,000 ton miles of freight. In 1943 with 625,000 fewer freight cars, 21,000 fewer engines and a million less workers than in 1918, they hauled 725,000,000,000 ton-miles. That spells better technology, higher load factors, more products, less work.

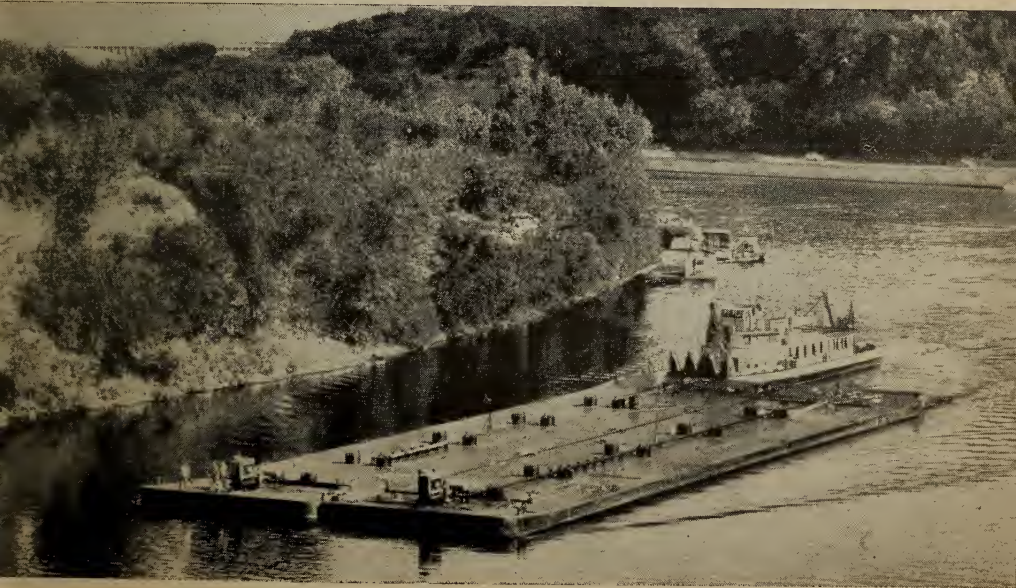
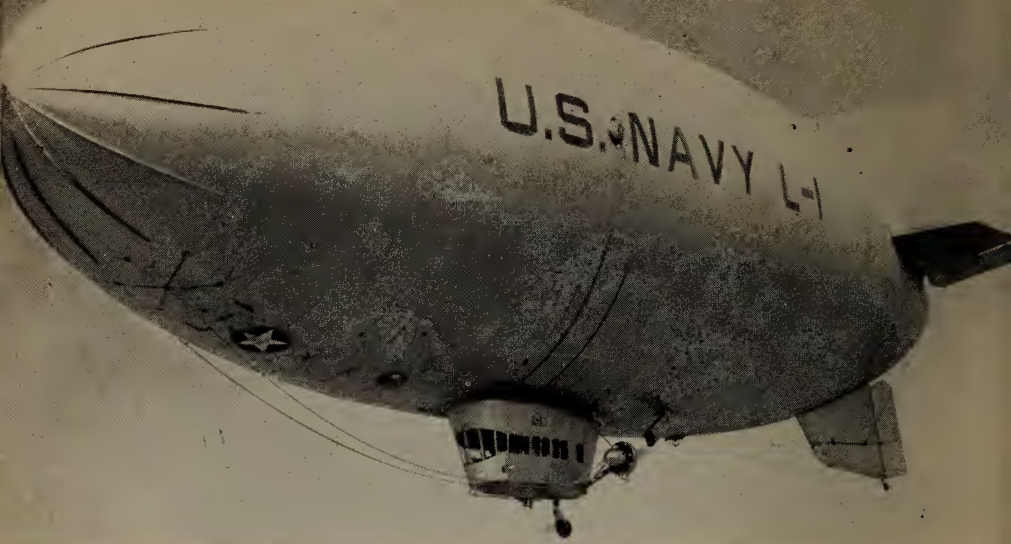


Photo: Courtesy The Pure Oil Company

The Anker L. Christey towboat pushing two oil barges around a bend in the upper Mississippi. It is a 108 foot long, 30 foot wide, V-bottomed, triple screw, 1200 h.p. Diesel boat, with a crew of 12 men. Tow load is 32,000 barrels of gasoline at a land speed of 9.21 m.p.h. It has hydraulic, single lever control of engines and rudders. Waterways are the most economical means of transportation for bulk freight. For a scientific discussion of its possibilities see A-17 **TECHNOCRACY** magazine, October 1939.



Official U. S. Navy Photo

Helium inflated Blimps like this one patrol our coasts against submarines. The Bureau of Mines operates 5 helium plants producing 25 times the prewar output. Helium is also used for asthma, tuberculosis, caisson disease and in welding magnesium. The U. S. Government has a near monopoly of this gas. That's one thing the fascists didn't get. Reason? No free enterprise in helium. Get the point?



Signal Corps Photo

The Army Service Forces Transportation Corps operated the Iranian railroad in Persia. Trainloads of American made war materiel moved through the ancient deserts and mountains to northern supply depots. It was a part of Lend-Lease to Russia. American technology is capable of flooding the world with war goods. It has done it. If it can provide abundance in war, it can do it in peace.



Photo: Courtesy The Elmco Corporation

'And I learned about minin' from that.' Here is the Rocker Shovel, powered either by compressed air or electricity. It has a one-half yard bucket. The operation is an overhead arm action that throws the rock into the loading car behind. This model with one man tending it will load up to 5 tons per minute. A husky mucker with a shovel can muck 4 tons per hour. From the neck on down a man is worth about 1/10th of a horsepower. As measurement proceeds, the validity of opinions declines. See?

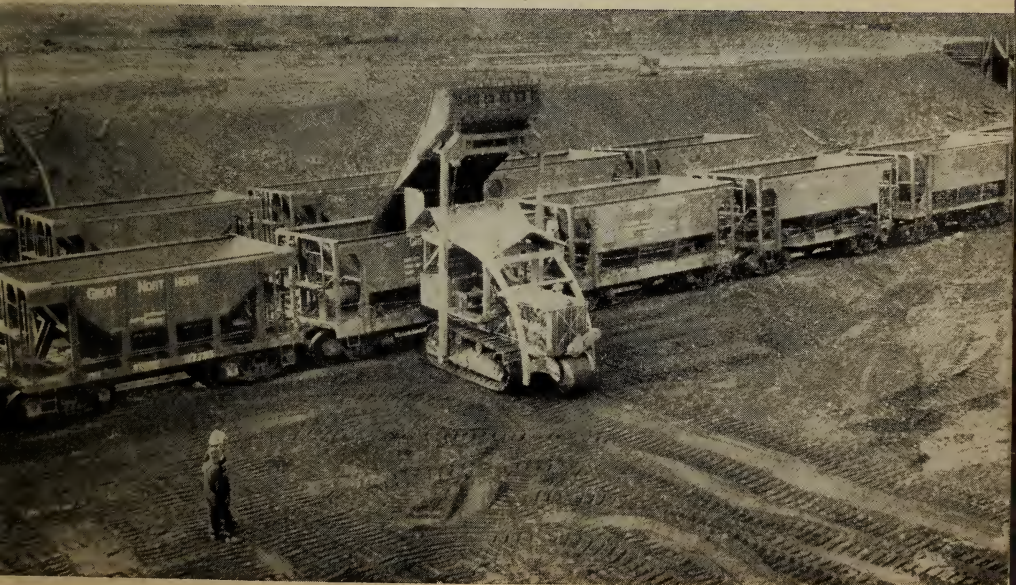


Photo: Courtesy Caterpillar Tractor Co.

A Diesel D8 Tractor with Athey Mobiloader loading stock piled ore into railroad cars on the Mesabi Range in Minnesota. Material is moved 80 feet and loaded at the rate of 330 tons an hour. Imagine doing this with oxcarts and shovels! How much could you load in one hour? The difference is technology. How long would it take to settle up a new frontier now, if we had one? But where is there one?



Here is the greatest skill and man-hour killer up-to-date. It's the IBM Automotive Sequence Controlled Calculator. It solves almost any known problem in mathematics correctly out to 23 figures and if an error is made in the process the machine will stop. A problem which required four experts 3 weeks to work out with ordinary calculators was solved in 19 hours. Whew! There's no space to explain more; besides we're stuck. But, how about applying it to measuring some of America's social problems?



Photo: Courtesy Norfolk and Western Railway

And here's what it's all about, North America. We mean the physical America of industrial equipment and resources, rivers, mountains, valleys, prairies, lakes, people, etc., the land itself. It's worth working and striving for to bring its little Price System social institutions up to the stature of its great technology. Here's a scene from the Roanoke Valley in Virginia. We may sing 'carry me back' till we're green in the face, but events are driving us forward to the New America, willy-nilly.



U.S.D.A. Photo

Preliminary patterns of science on the ground and in the air. It was said that air power will win the war; and also that food will win it. Every little bit helps. Contour farming holds soil, water, seed and fertilizer on the land, helps to increase yield. It is a step toward agro-technology. The trend in aviation is toward the aerodynamically correct Flying Wing. We'll get there after while.



OWI Photo by Lee

TVA transmission lines in Alabama. Out over the singing wires in all directions goes the invisible army of America. Extraneous energy is the keystone of the Power Age; along with technology it makes a potential abundance possible for all citizens. America has plenty for everybody in peacetime or war. The problem of distribution is simple but we have to scrap the methods of yesterday.



Photo: Courtesy National Dairy Products Corporation

Home canning and gardening are all right, but you can't solve a mass technological food problem with the methods of feudal agrarianism. America's technology is going to run us out of scarcity soon and smack into abundance whether we like it or not. It requires Price System fascism to maintain scarcity in goods and services and to uphold oxcart ideologies. They're all un-American. 'Out, Damned Spot!'

From the Camera's Eyevue

War, What For?

Shouting The Battle Cry of Freedom

The causes of war are manifold. They have been traced to personal quarrels for the possession of a throne, or a woman. There have been revolutionary wars for the independence of one country from another. Among other causes are political, economic, religious, racial and social factors. Tersely expressed, wars have been waged for 'God, Greed and Gold.'

The War of the Roses in England (1455-1485) is an example of a war for the possession of a throne. The legendary Trojan War (circa 1194-1184 B.C.) is poetically reputed to have been waged over a woman. The American Revolutionary War (1775-1783) and the Greek-Turkish war (1821-1828) are two examples of wars waged for independence. The Franco-Prussian War (1870-1871) was preceded and precipitated by much political bickering between Napoleon III and Bismarck. The war for the rich gold mines of South Africa, called the Boer War (1899-1902) was an out and out economic war. The Biblical Wars of the Israelites (The Chosen People) and the Boxer Rebellion of 1900 in China were racial wars. Finally, the war of defense waged by Russia against the assaults of the western democracies, immediately following the First World War, is a case in point where social factors predominated.

Warfare has often been distinguished by codes of ethical conduct on the battlefield, and toward a defeated enemy. For instance, the terms by which the Boer War was concluded were very magnanimous. The United Nations today are observing the terms of the Geneva Convention. The American Civil War was concluded on generous terms to the Southern States. So, although war in itself is hell, men have throughout the ages tried to salve their conscience and save their face by surrounding it with gentlemanly agreements and knightly codes.

Am I My Brother's Keeper?

Not so with religious wars. Organized murder carried out in the name of Jesus Christ has always been characterized by the utmost savagery and cruelty. Europe has been laid waste prior to World War II by religious wars. The part played by reactionary ecclesiasticism in this war yet remains to be proclaimed by history.

The first period of religious wars in Europe occurred between 1559 and 1598. These wars were caused by the hostility of the established ecclesiastical, political and economic institutions toward the Reformation then spreading over Europe. Protestant Holland was ravaged by Catholic Spain. Philip II, King of Spain, wrote the Pope that 'he would lose the provinces (The Netherlands) or would maintain their Catholic religion.' The struggle lasted 37 years. Eventually The Netherlands won their independence.

France was split into warring factions over the Reformation. Internecine strife went on for years and culminated in the Massacre of St. Bartholomew's Eve August 24, 1572. Thirty thousand Protestants were slaughtered. When the news reached Rome, the Pope ordered a jubilee and a procession to the Church of St. Louis and caused the Te Deum to be chanted. This struggle ended with the Edict of Nantes by which King Henry IV of France granted toleration to his protestant subjects.

Spain then attempted to re-catholicize England. Philip II outfitted the Invincible Armada and set sail in 1588. Two violent storms, plus the British Navy, decimated his fleet and only a feeble remnant got back to Spain. This put the quietus on any further attempts of that nature.

The second time Europe was gutted by religious warfare was during the Thirty Years War (1618-1648). The forces of social reversion were still determined to stamp out the Reformation. It started as a war between Bohemia and Austria. Soon every country in Europe was involved. The Thirty Years War exceeded in savagery the invasion of Attila the Hun. Europe reverted to barbarism, and can-

nibalism was openly practiced in many countries. The holocaust ended in a number of treaties signed at Westphalia on October 24, 1648.

Song Of The Lorelei

And now we are come to World War No. 2. What kind of a war was and is this? What are the motivating factors behind the scene? Has it been a war for the possession of a throne or a woman? The asking of the question answers it. Has it been a war for the independence of one nation from another? Clearly not, since all the combatants are sovereign states. Has it been a racial war? Not in the European field, at least, because all the combatant nations are of the same race.

America went to war against the Axis Pact of Fascism. But what is fascism? Not many Americans know. Most of them think of something vaguely associated with Hitler, Mussolini, or Hirohito. The so-called free press of America, in harmony with its ancient function of service to the status quo, has done an admirable job of throwing a smoke screen around the real nature of fascism. These characters were and are only the 'fronts' for a proposed mode of social operation. After they have been eliminated from the international picture, fascism will still be there in all nations. Fascism is a reversion of civilization which is proposed by its proponents as an escape from the political, economic, religious and social problems which have arisen as a result of the world-wide industrial revolution.

Where that revolution has advanced the furthest, its concomitant social problems have become the more insoluble. Consequently, the pressure for social change brought on by physical trends is greater in the more advanced industrial nations. However, the social and religious hangover from the pre-Reformation age of authoritarianism is more pronounced in those nations which have made the least industrial advancement.

Turn Backward, Oh Time, In Thy Flight!

This is why the world-wide conspiracy to institute fascism as a mode of social operation originated in the industrially backward nations of the Axis Pact of Fascism. And this is why that conspiracy was largely abetted and financed by reactionary political, religious, economic and social forces in the more advanced countries. It was regarded as insurance against impending social change. It is physically impossible for the Price System to solve its major social problems and still remain a Price System. Since this latter consideration is the ne plus ultra of our dominant social consciousness, we are left with no other course except a descent into fascism. The triple oligarchy of ecclesiasticism, private enterprise and the political state must be maintained at all costs.

Here we have the clue to the motivating factors behind this present war. It is a war in which religious, economic, social and political factors predominate. After fascism abroad has been defeated, the counter-reformatory social attitudes and policy of its proponents will still remain, in all nations. The defeat of fascism abroad will result in a victory, only, for the status quo ante. America will again be where it left off in 1939.

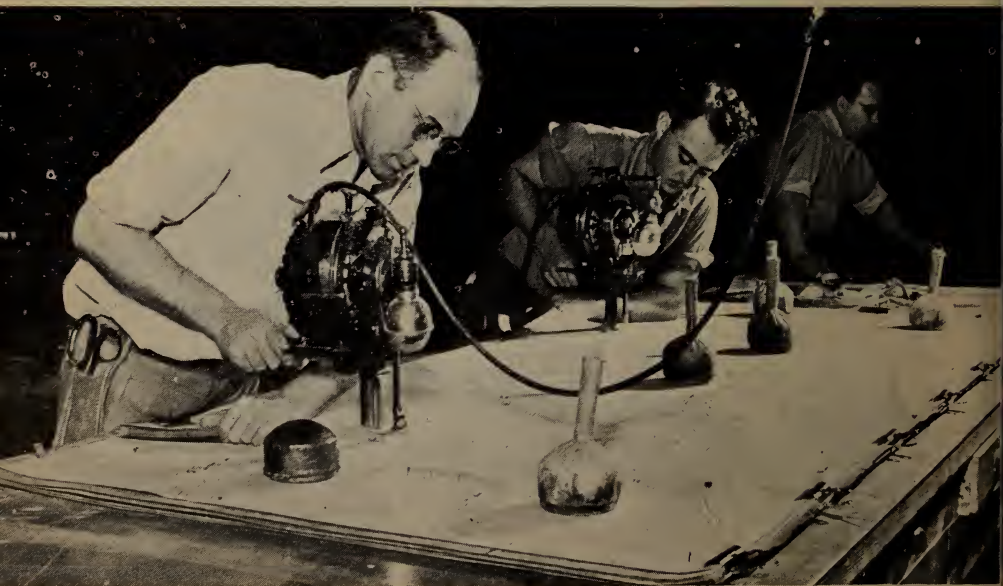
After this war all our internal social problems will again be with us, aggravated and multiplied. The pressure for social change will be intensified. The religious, economic, political and social forces which brought on this war will still be at work abroad as well as in America. So will the physical trend of events brought on by the advance of science and technology. American's future lies in obedience to its technological trends and not to the anti-social attitudes of the tripartite oligarchy of ecclesiasticism, private enterprise and the political state.

The only program of National Operations that can guide America safely through the transition period of the postwar era is **TECHNOCRACY'S PROGRAM OF TOTAL CONSCRIPTION OF MEN, MACHINES, MATERIEL AND MONEY WITH NATIONAL SERVICE FROM ALL AND PROFITS TO NONE.** It is America's destiny to move upward to a higher form of civilization, not downward to a lower one. America will have defeated its fascist enemies abroad only to lose in the end unless it liquidates its pro-fascist enemies at home.



Signal Corps Photo

U. S. Army Engineers bridging a fast flowing river in New Guinea. It is a difficult and hazardous job. Here, the breakwater form, completed and attached to steel cables, is being put in alignment by Caterpillar tractors on the shore. After reaching position it is filled with concrete to form the main support of a permanent wood and concrete bridge. What would they do without the engineers?



Official OWI Photo by Palmer

And, what would the engineers do without skilled personnel on the home front to back them up? Building assault boats for the U. S. Marine Corps. Mass production methods used in the men's clothing industry are adapted to war. Patterns are laid out and skilled cutters guiding electric knives cut out many patterns simultaneously. Each cutter controls power equivalent to scores of invisible men.



Official Photo U. S. Air Forces

This is one of Uncle's latest air fighters, the P-51, Mustang. It is rated at over 400 miles per hour in level flight with a ceiling of about 40,000 feet and a tactical radius of 600 miles. The cockpit enclosure is of the 'teardrop' design with 360 degrees of visibility. The entire top can be rolled back at night, eliminating reflections from the instrument panel. Its high ceiling shows it to be turbosupercharged. The Mustang approaches the probable speed limit of propeller driven planes.

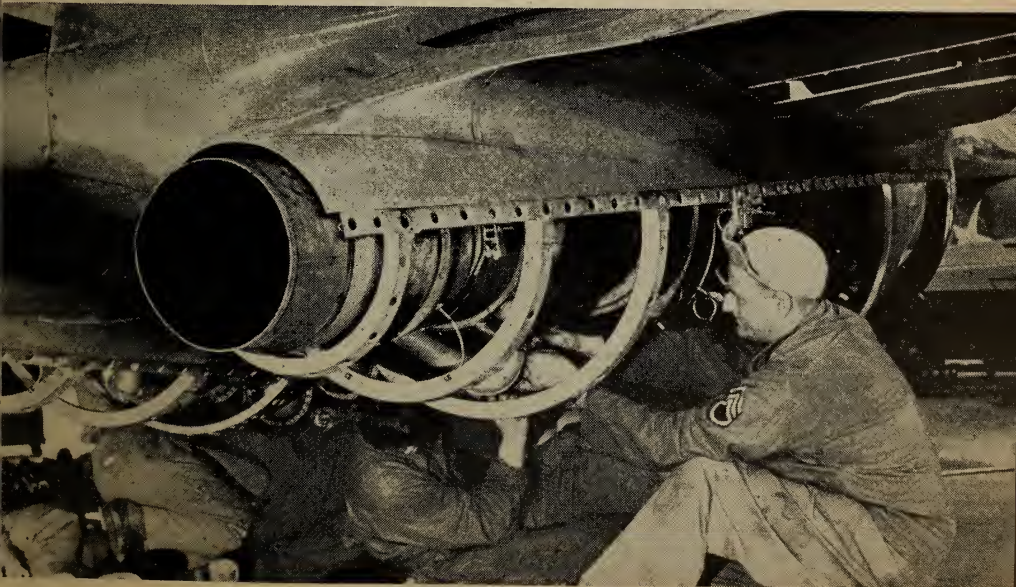


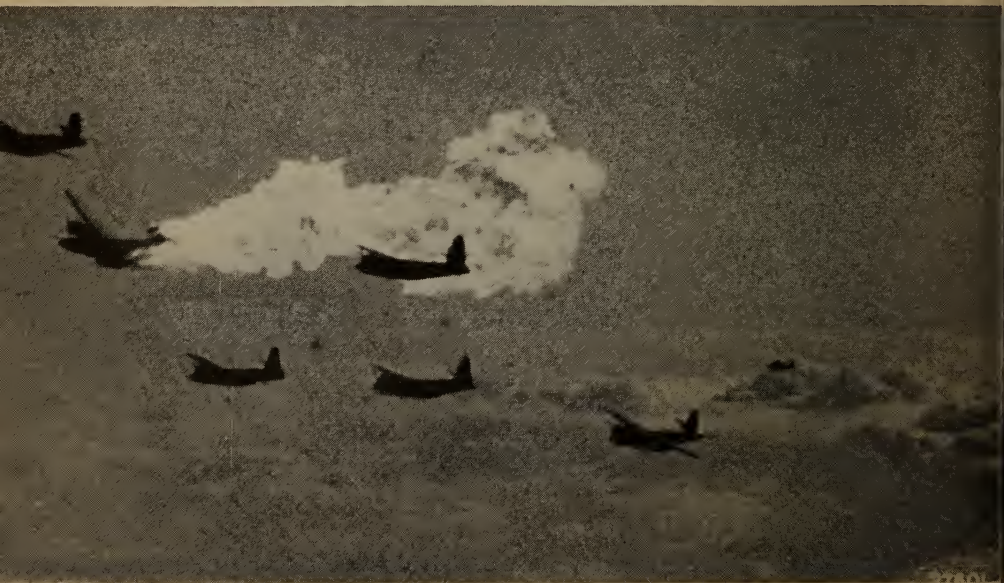
Photo: Courtesy General Electric Company

Here's something a good deal faster, the Bell P-59A jet plane. Maintenance and repair takes less than 1/5th the time, labor and tools necessary with a reciprocating motor. Four men can pull both engines on a plane and install new ones in a day. Eleven bolts hold the entire assembly on the plane. Jet engines require no warming up. A minute after the starter button is pressed the plane can take off. The jet motor has blasted an awful hole in the skill and man-hours of the airplane mechanic.



Official U. S. Navy Photograph

An interior view of the radio and pilot compartment in a PBM Mariner, Navy patrol bomber. Note the maze of dials and instruments. Most of the technology and skill represented here was almost totally unknown 40 years ago. It is a product of the Power Age and requires training, knowledge and precise control. The whole setup is highly developed, complex and tenuous. Yes, tenuous is the word, for its stability depends upon exact adjustment of coordinated factors. Any moron can ruin a fine watch.



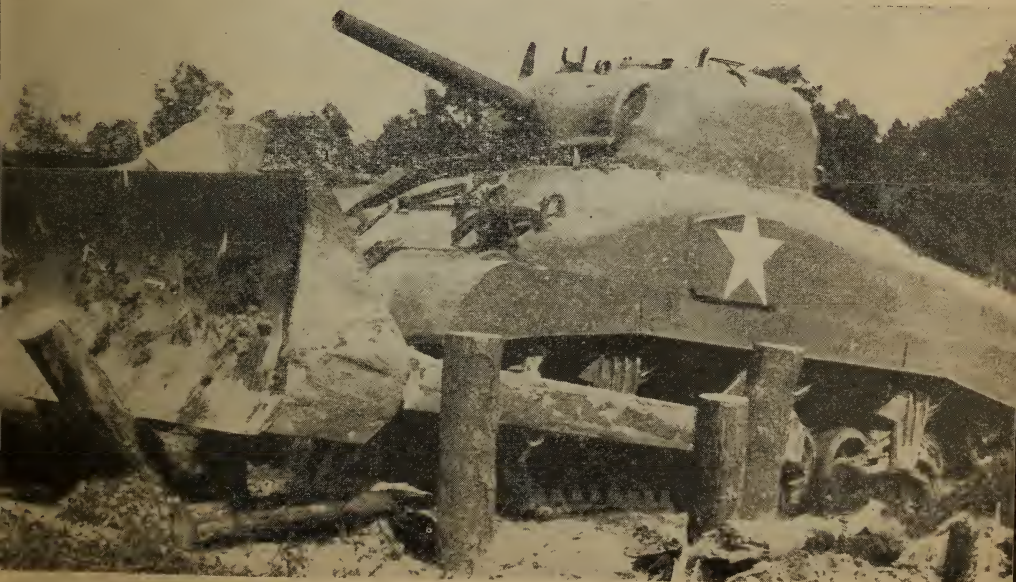
Official Photo U. S. Air Forces

See what we mean? Intricate highly developed technology is easy to destroy. Here, Nazi flak has reached a Martin B-26 Marauder of the U. S. Army's 8th Air Force. The formation is somewhere over France. Flame billowed out from a direct hit and nearly enveloped one of the other planes. The bomber was destroyed and crashed while burning. All that fine machinery, technology, skill and personnel ruined in an instant. Mechanisms of the Power Age need constant and precise control.



Official Signal Corps Photo

U. S. Army adopts 9-lb. 'baby.' The M3 submachine gun takes .45 caliber pistol ammunition, holds 30 rounds and fires either one shot at a time or at the rate of 450 a minute. Fabricated mainly from stamped metal and screw machine parts no tools are needed to take it apart. It is completely enclosed, mud-proof and has no external moving parts. The stock is the ramrod also. The M3 is used as a pistol or shoulder gun. After 49,600 rounds of test firing its accuracy improved. Some baby!



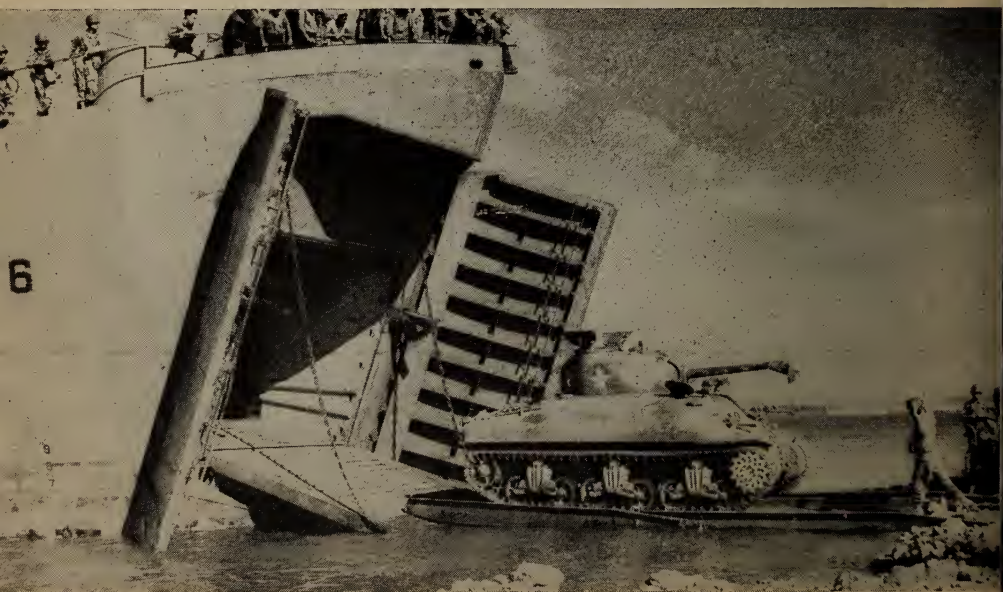
Official U. S. Army Photo

And now comes the Tankdozer, a medium Sherman mounted with a bulldozer blade. It combines unimpaired fire power with ability to move earth and great weight and momentum. It breaks through obstacles either by impact of brute force or by building ramps over them. The bulldozer blade assembly can be jettisoned in 10 seconds. Its work power is equal to a heavy tractor. What the heck's next?



Signal Corps Photo

Saipan was bought at a cost of more than 3000 American casualties. But the Japs paid off in heavy odds. Here two American soldiers are probing the ruins of a demolished Jap sugar refinery, blasted apart by aerial bombs and naval gunfire... Notice the narrow gauge railroad. It's symptomatic of the narrow gauge technology of Japan as compared to the wide gauge technology of America, so to speak.



Official U. S. Navy Photograph

War opens the door wide. Here's a closeup view of the LST (landing-ship-tank). This is a beautiful illustration of naval technology. Before the war there was no such a boat as an LST. Neither did some naval designer dream it up overnight to meet the emergency. The necessities of amphibious warfare dictated the LST. The designer must conform to the physical needs and limitations. Will we ever learn to attack social problems with this object lesson in view? The principle is the same.



Official U. S. Army Photo

Caterpillar D-8 bulldozer with armored cab, filling up a shell crater. These are used in close proximity to actual fighting. Opinions may have held that armored cabs were an unnecessary luxury for bulldozer operators. Perhaps many had to die before the facts dictated otherwise. In war or postwar America's problem is the same. Opinions are becoming too costly a luxury. Observation, research and experiment must replace a priori reason, logic and discussion. Let's find the facts. Let them decide.



Photo: Courtesy General Motors Corporation

Technology beings with measurement and planning and involves coordination. The draftsmen shown are working on some specific part of a coordinated design for production. Not so with our national effort as a whole. There are millions of conflicting plans for details but no master plan to orchestrate them. This is the greatest weakness of America. In resources, energy and technology we are tops.



Official Photo U. S. Air Forces
 Army Engineers now erect this temporary steel span called a Bailey Bridge, named after Donald Bailey, an English engineer. It is made up of interchangeable parts held together by pins, lugs, bolts, clamps, turnbuckles. It's built on rollers, then pushed out over the gap and straddled into place. A 180 foot gap can be bridged in 7 hours. It will carry the heaviest traffic. Engineers to the rescue.



U. S. Army Signal Corps Photo
 In the steaming jungles of the tropics; on the broad expanse of the Pacific; in Europe; and in the bleak Arctic American soldiers carry the colorful symbol of their motherland. In the midst of a driving snowfall in Iceland, the Stars and Stripes waves in blending harmony with the slanting storm. Sergt. Lewis H. Zerke stands in front of the color guard to receive the Legion of Merit Medal from Lieut. Gen. William S. Key, Commanding General, U. S. Army Forces in Iceland.

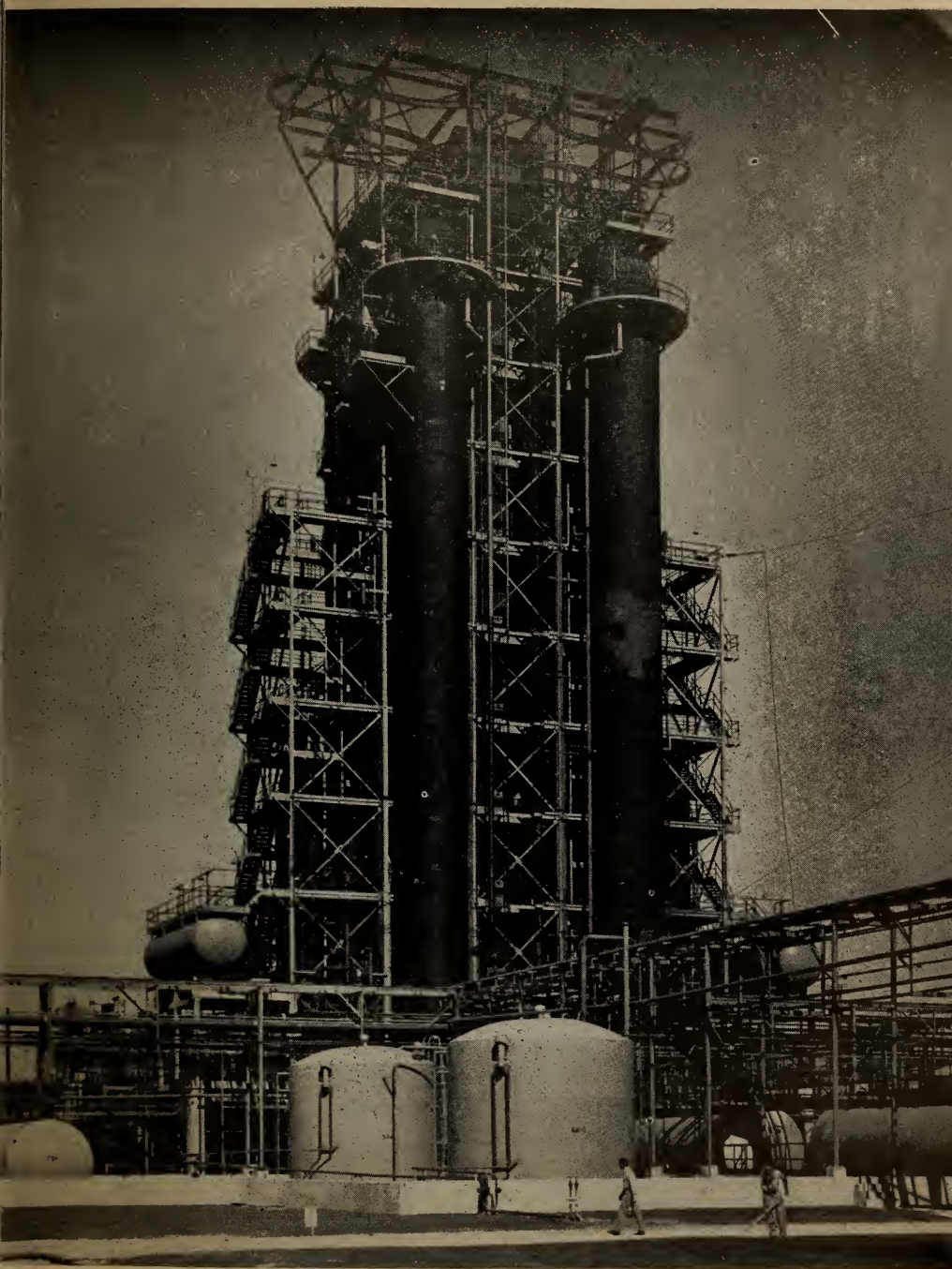
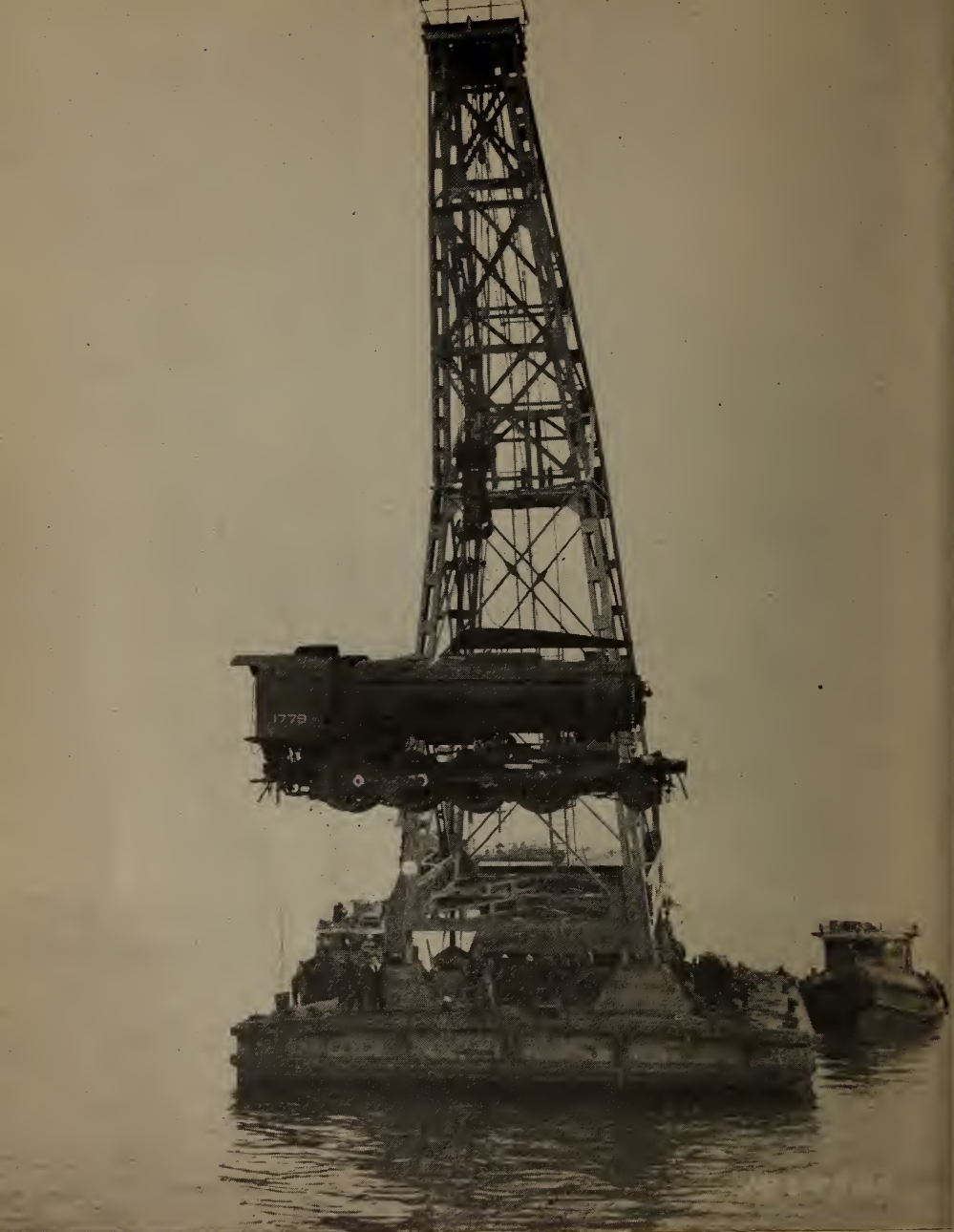


Photo: Courtesy Monsanto Chemical Co.

Reaching into the sky 20 stories above ground in this distillation tower of a Styrene plant at Texas City, Texas. Styrene is one of the raw materials used in Buna-S synthetic rubber. The plant went into production seven days less than a year from the time construction was started. Taxpayers' money financed it. Who'll get it after the war at a nice discount? Who cares? The plant's the thing.



Signal Corps Photo

Notice the background painted out of this picture for military reasons. The most important part remains. Here is a 72 ton locomotive being unloaded by a floating crane, at Casablanca, French Morocco. It would be easier to destroy the locomotive than the crane. It is a far more complex mechanism. So also is our social system today far more complex than that of 40 years ago. Get the idea? Our social system, too, requires precise control for stability. The Price System promotes instability.



Photo: Courtesy The Milwaukee Journal

'THE FOXES HAVE HOLES AND THE BIRDS HAVE NESTS —'

In this small tent, pitched along Mud Creek in Milwaukee, Wisconsin, a family of four lived for a week until the law stepped in. The family, Mr. and Mrs. Ronald Graff, 26 and 23 years old, respectively, and their children, a 3 year old girl and a 15 month old boy, had been sleeping on the bare ground without blankets. Having no heat the family subsisted on bakery goods, canned foods and milk.

This situation came to the attention of the law through Earl Crawford and his two sons who were out seeking fishing worms. Their attention was attracted by the cries of a baby issuing from the tent. They looked in and saw the baby lying on the ground, alone in the tent and crying.

Crawford reported to the Sheriff's office, and Deputies Jack Axtell and Roy Stark investigated. By that time Mrs. Graff and the 3 year old girl had returned from a shopping errand. She informed the deputies that her husband had bought the tent a week ago when they could not find a place to rent after having lived with relatives. Mrs. Graff told the deputies that her husband was a **WELDER IN A WAR PLANT**.

'The law in its majestic equality forbids the rich as well as the poor to sleep under bridges, to beg in the streets and to steal bread.'

Anatole France.

From the Camera's Eyerview

The Real Story of America

'When My Ship Comes In'

The average American pursuing his average way from one year's end to another has little conception of the world of reality around him. Like a fish in the ocean, he is immersed in the artificial ideologies of the social structure of which he is a part. He plods along his well-worn rut, working, eating, sleeping, mating and chasing after phony recreation. A host of little worries, problems and obligations are snapping at his heels every day. His nose is on somebody else's grindstone all the time.

Occasionally he seeks surcease from his sham existence in the corner tavern where any man may become a big shot to himself for a time, and for a price. Or else he may indulge in the vicarious heroisms of Hollywood art, at the movies, or the 99-44/100 percent pure drivel of radio dramas where, in both cases, 'right' always defeats 'wrong' and virtue is triumphant in the end. This is supposed to constitute recreation and escape from reality. He has been told that it is good for him.

Somehow or other, though, he never finds complete satisfaction in his counterfeit existence. Ever present in the average American is a psychological longing that finds expression in the words of a popular song: 'Somewhere over the rainbow, way up high, there's a land that I heard of, once in a lullaby.' This yearning visualizes a far-off land of happiness, where all wrongs will be righted, all dreams will come true and his very own ship will come in, at long last.

Escape Into Reality

It is not physically possible to escape from reality, it is always present. One can only escape from one artificiality to another one with a different odor. Reality always follows and must be reckoned with in the end. That's what is dogging the average American. So he chases from one fraud to another while all around him, pressing in from all sides, are the physical realities by which it is possible for him and all other citizens to live and prosper. Indeed, these physical realities are becoming so insistent in modern America that it is becoming more and more difficult to deny them.

North America has progressed into an order of magnitude and complexity of operations in her civilization wherein the dominating forces behind the superficial social, political and economic facade are the laws of thermodynamics and the impact of technology. It is only by physical facts that we can live and prosper in the Power Age and these facts require very little discussion because they can be determined by measurement. Being dominated by physical laws this culture of the Power Age must also be directed by physical laws.

The superficial, tantalizing existence of the average American today is traceable to the futility of endeavoring to fit all social problems into the Procrustean bed of an obsolete political ideology. The facts which determine our existence cannot be ascertained by counting noses to get a consensus, when decimal points are necessary. We have outgrown the old standards. We are trying vainly to escape into the past which no longer exists; while the future is rushing at us with potentialities which beggar description.

In order to understand the realities of living in the Power Age, it is necessary to know the physical history of America, the story of the impact of science and technology upon the social structure and the resulting instability produced thereby, together with the irreversible trend of physical events following that impact. It is not enough to know the technical aspects of science; millions are familiar with that now. One must also grasp the social aspects of science.

This fact is understood by only a relatively few Americans today and there is only one Organization set up to propagate knowledge of this type. That Organization is **TECHNOCRACY INC.** It is dedicated to a more efficient design of social and industrial operations. For our picture story this time let's escape into reality and pay a visit to the **DETROIT SECTION OF TECHNOCRACY INC., AT 9108 WOODWARD AVE.** There, on the walls, for all who care to see, is the Real Story of America in the form of maps, charts and mural paintings.

2. DYNAMIC EQUILIBRIUM of Man Animal and Plant



DOMESTICATION OF ANIMALS AND PLANTS
BETTER WEAPONS

MORE FOOD AND
GREATER POPULATION

1. DYNAMIC EQUILIBRIUM of Man Animal and Plant



PRIMITIVE MAN

NO FIRE
NO WEAPONS
LOW FOOD SUPPLY

Easy prey for predatory animals



FIRE
DEFENSIVE AND
OFFENSIVE WEAPONS

More food - less mortality

THE POSTULATES OF SCIENCE

A POSTULATE PARTAKES OF THE NATURE OF A FACT BUT DIFFERS FROM A FACT IN THAT THE OBSERVATIONS SUPPORTING IT ARE NOT CONFIRMABLE

- 1st POSTULATE
THE EXTERIOR WORLD ACTUALLY IS
- 2nd POSTULATE
NATURE IS UNIFORM
- 3rd POSTULATE
THERE ARE SYMBOLS IN THE MIND WHICH STAND FOR EVENTS AND THINGS IN THE EXTERIOR WORLD

INTRODUCTION TO SCIENCE

SCIENCE - THE METHOD OF THE DETERMINATION OF THE MOST PROBABLE

A FACT - A CLOSE AGREEMENT OF A SERIES OF OBSERVATIONS OF THE SAME PHENOMENON - All observations must be susceptible of confirmation

A DEFINITION - AN AGREEMENT - wholly arbitrary in character - AMONG MEN

Science shows the correct way to approach the social problem. First comes the three basic postulates of science, then the nature of Fact and Definition and the scientific method. This is elementary and indispensable. Man's progression from the savage state can be measured by his rate of energy conversion. Naked and unarmed, he was prey for wild animals. With fire and club he could hold his ground. With domestic animals, windmills, and bow and arrow he became more secure and dominating.

NATURAL GROWTH CURVES

1890-1910-1920

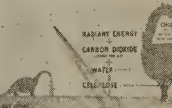
THE STORY OF ENERGY (2)

VARIOUS TRANSFORMATIONS OF ENERGY



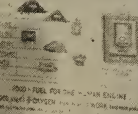
THE STORY OF ENERGY (1)

RADIANT ENERGY INTO CHEMICAL ENERGY



HEATING VALUE OF VARIOUS FUELS

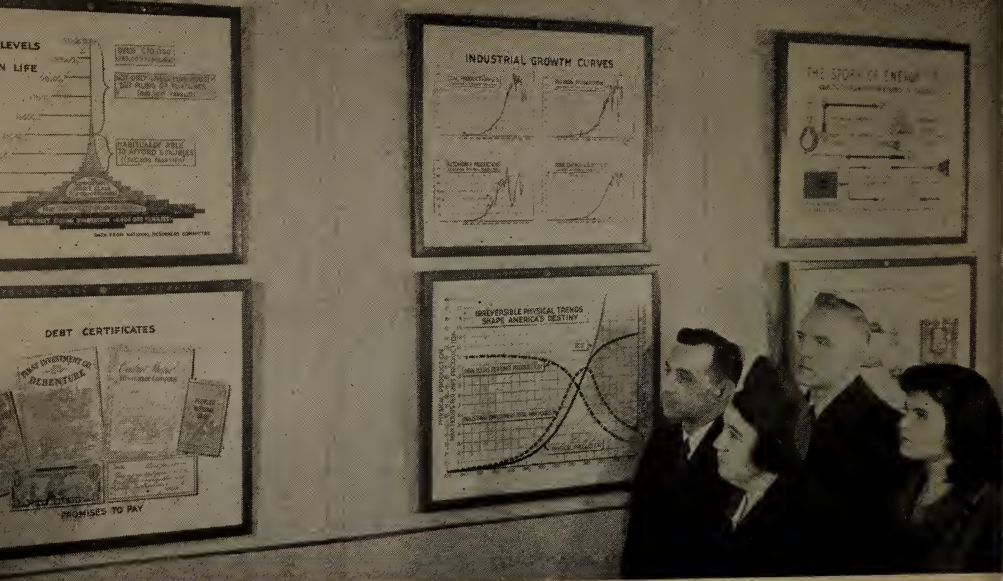
1 BTU = 252 CALORIES



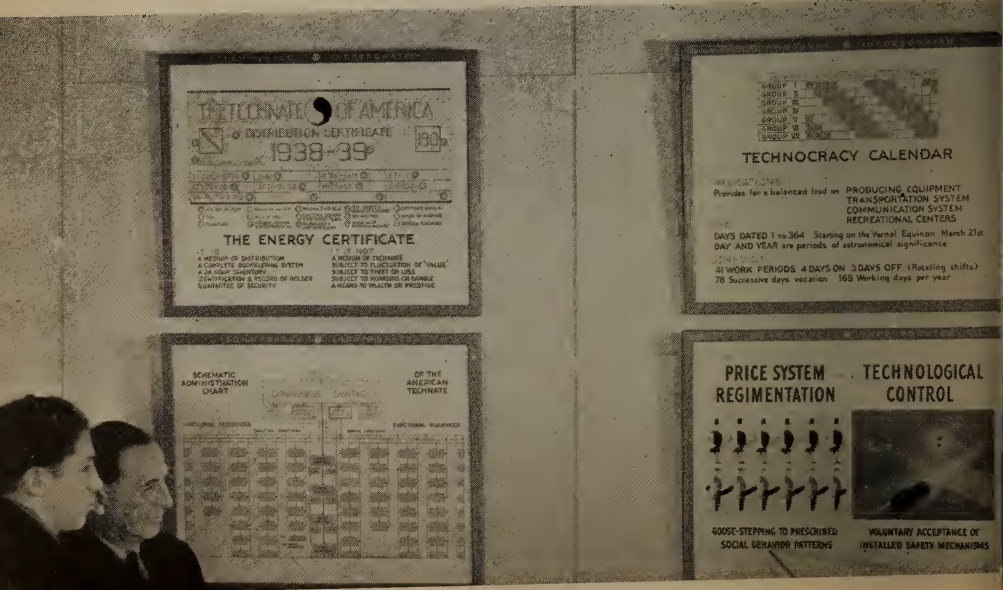
DYNAMIC EQUILIBRIUM of Plant and Animal



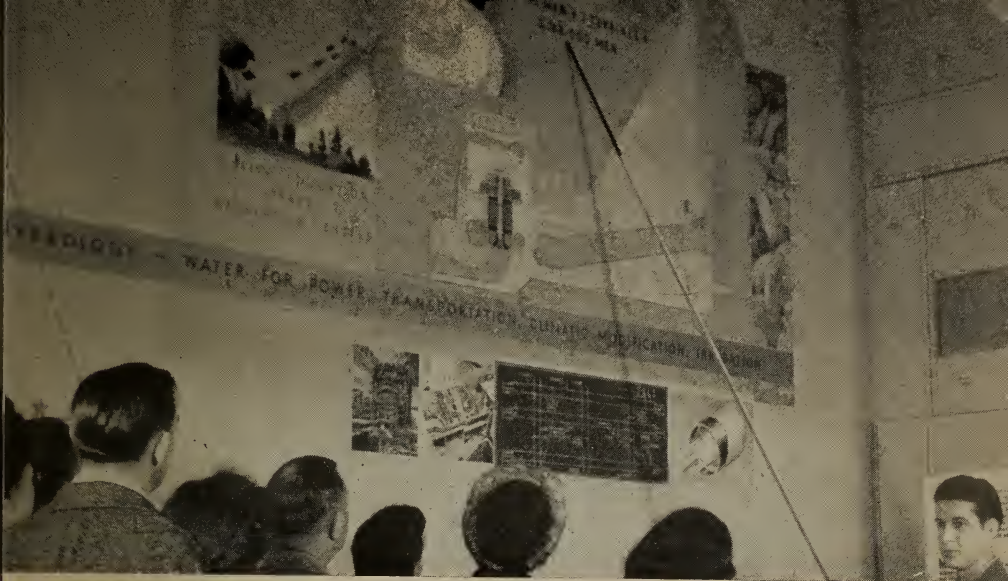
There is a perpetual struggle going on between all plant and animal life for a larger share of the Sun's energy. This creates a state of natural balance, i.e., dynamic equilibrium. Any species that captures more energy disturbs this balance in its favor. All plant and animal life pursues a fundamental 'S' shaped growth curve. Energy is basic to all life; it can be changed into many forms for use and it can be measured. The law of energy determinants is immutable.



Industrial growth curves follow the same 'S' shape as growth curves in the plant and animal world, starting slowly, accelerating to a compound interest rate and leveling off. Then they may remain constant, decline to a lower level or to zero. The interference control over higher industrial growth is the mechanism of the Price System. Goods cannot be produced except by creating ever more debt. This is a ready past history in America. Notice the chart of income levels in American life.



Illustrated here are the Energy Certificate, a non-debt creating medium of distribution; the Technocracy calendar, necessary to attain a balanced load system of production; and the Schematic Administrative Chart for technological control. All this is a scientific design to tip the factors of dynamic equilibrium in our favor. America must either go up or down. The design involves voluntary acceptance of scientific controls, because social change must be accomplished peacefully.

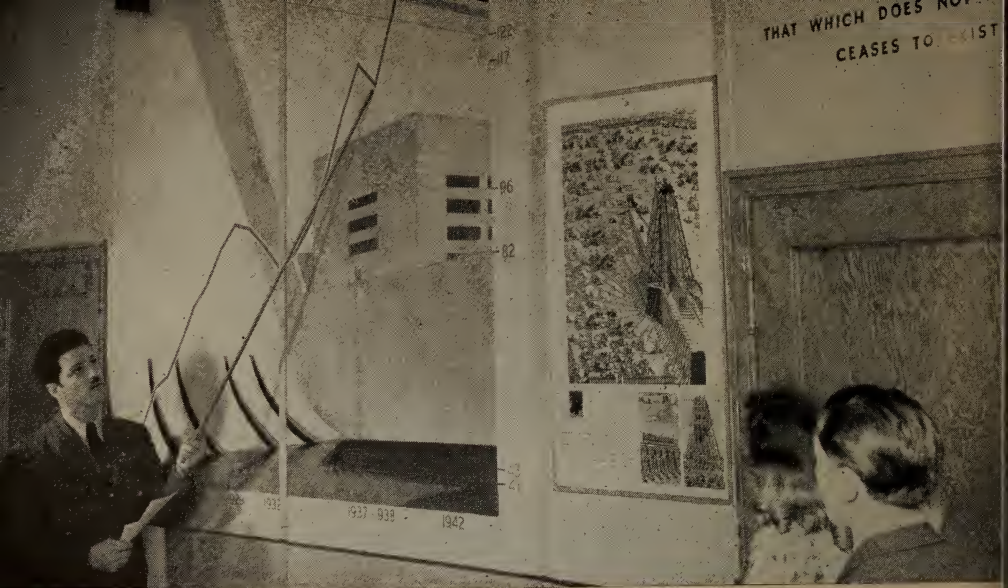


Two turbines added to the skill of 38 men equals the labor power of 3,168,000 men. Doesn't make sense? Yes it does. The social implication involved is food on the average man's table, shelter for him and his family against the elements and security for his old age. He had better learn its meaning. Below is a blueprint of the Continental power system. To its right is a cross-sectional view of the underground cable for transmitting 1,000,000 volts D.C., 3,000 miles, with only 10 percent line loss.

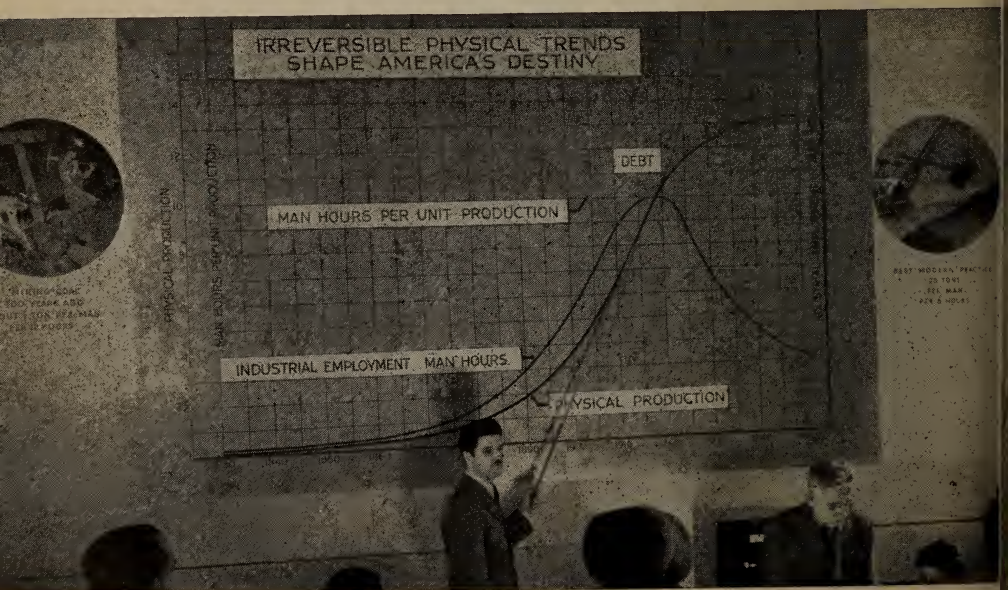


Millions of years of sedimentation deposited on America's surface 9 inches of fertile top soil. Every year 1,000,000,000 tons of it is washed into the oceans. Out of 1,903,576,620 acres, 41.5 percent are seriously eroded, 14.8 percent severely so, 7.6 percent useless and only 36.1 percent unaffected. One-third of America's resources have been literally sold down its rivers. Price System methods lead to erosion and ruin. Reforestation and thousands of dams are necessary to halt this waste.

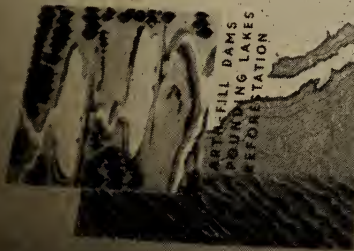
THAT WHICH DOES NOT
CEASES TO EXIST



The greatest engineering feat of the middle Ages was the moving of a 75 ton obelisk 800 feet from the Circus of Nero to St. Peter's Square in Rome. It required 907 men and 75 horses 18 months to do the job. Today a crane operated by one man can move 75 tons 800 feet in 10 minutes. In October 1941 the daily production of electric power in the U. S. was almost 700,000,000 kilo-watt hours. Multiply this by 13 and you get the number of men it takes to equal it. This is the Power Age. Get the idea?



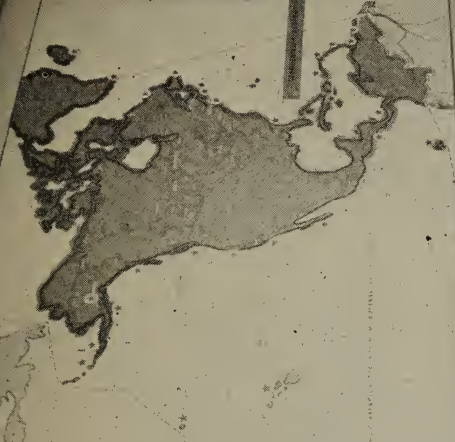
One man could produce one ton of coal in twelve hours 100 years ago. Today in a modern strip mine one man can produce 25 tons of coal in 8 hours. Notice the 'S' shaped curves on this basic chart by TECHNOCRACY INC. Notice how total man-hours and man-hours per unit are declining toward zero while production has risen to a high peak. The only way to produce more is to work less. These curves obey the physical laws of dynamic equilibrium. They hold the answer to America's problems.



PRICE SYSTEM
PRACTICE LEAD
TO DESTRUCTION AN
ULTER ruin

SCIENTIFIC OVER ALL PLANNING

FLOOD AND EROSION CONTROL



Overall view of mural paintings on north wall of the meeting room. They were designed and painted by Technocrats. For comparison with better known murals in Detroit, see JANUARY-FEBRUARY GREAT LAKES TECHNOCRAT, page 43. The North American Continent shown comprises 19 percent of the world's land area. It has the full range of climatic conditions and the lion's share of the world's natural re-

sources. Racially, it is the most homogeneous area on earth; geographically the most united; industrially the most advanced. It has over 2/3rds of the world's engineers and the largest body of skilled personnel, yet contains only 9 percent of the World's population. North America is one organic and functional unit. Abundance is possible on this Continent now.

R-ALL PLANNING

THE MINISTERS

FOR THE DEFENSE

Technocracy proposes the application of Science to this Continental Area. Since America is the richest loot in all history, it is necessary to consolidate this area; vastly expand our technology; build the world's most powerful Armed Force; construct Continental super-highways; dig Continental inland waterways; install a Continental power transmission system; and provide gigantic defense bases

around its perimeter. From the International Date Line on the West to a boundary line in the East reaching from the tip of French Guiana to Greenland is the minimum area for the maximum defense of America. Who shall say that this great motherland of the Power Age needs less defense? This proposal is the greatest project ever conceived by the mind of man.

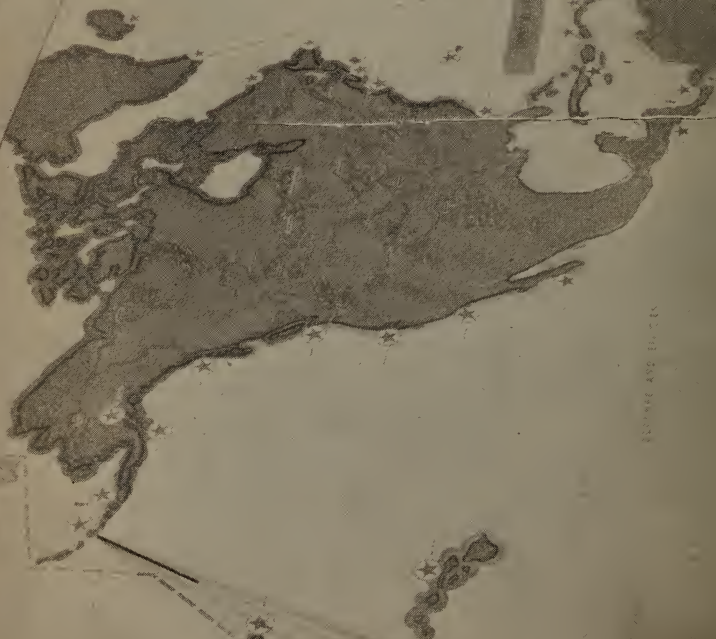




Photo: Courtesy Look Magazine

Here is another part of our land still in the making. Young America salutes the flag. This is the traditional American salute. It was used on this Continent by the Indians before the white men arrived. History shows no trace of it in the old world. Technocracy Inc. was the first organization to initiate and carry on a campaign against the outstretched right arm fascist-type salute which had been introduced into American schools by native fascists. Fascism is contrary to the destiny of America.



Techphoto by ACS R.D. 8141

No picture story of the old and the new in America would be complete unless it showed some of the activities of Technocracy Sections. Here is a lineup of Technocracy Gray cars at Cleveland, Ohio. Technocracy is the only social movement on this continent that predicts the form of the North America to come, from the facts presently at hand. At the same time Technocracy portends disaster for this Continent unless these facts are recognized. Impending social change parades its causes before.



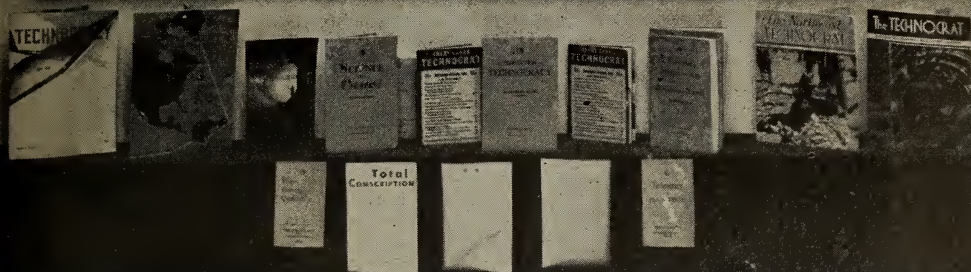
Akron, Ohio. Jan. 17, 1943

Techphoto--8141-3

Here's another type of activity Technocracy engages in, called symbolization. Notice the large sign. Technocracy, unknown until 10 years ago, has now become a household word in America. It may not be long until the trend of events will make it a household necessity also. Its research material will always be available for use when our social muddle becomes too deep to muddle through any more.

TECHNOCRACY'S FLYING WING

330 FT. WING SPREAD
CEILING 35,000 FT.
RANGE 10,000 MILES
SPEED 300 M. P. H.
BOMB LOAD 50 TONS
DIESEL ENGINES



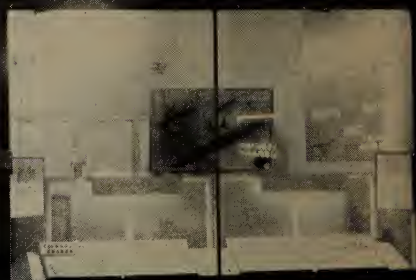
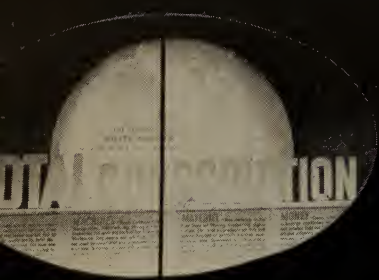
Techphoto by J. R. Rushing

IDEAS ARE COMMON PROPERTY, HELP YOURSELF

Technocracy has a large and growing volume of literature. This includes four continentally circulated magazines, numerous pamphlets and a Study Course Book. The body of thought expressed therein cannot be obtained at any school or college. It's scientific, new, factual and unanswerable. The above picture shows a window display installed in one of a chain of ten cent stores at East Orange, N. J. by Technocrat J. R. Rushing. A supply of literature is available inside the store.

Technocracy is an all-American organization. It salutes America's technology and her gallant citizens in the armed forces who are applying it against fascism abroad. Total Conscriptio of Men, Machines, Materiel and Money With National Service From All and Profits to None will make their job easier by intensifying the technology of war; and also insure all Americans against the perilous post-war period ahead.

TECHNOCRACY INC.



TECHNOCRACY IS AN OPEN BOOK

As night settles over America's greatest industrial city, the fluorescent lights blaze out bravely at TECHNOCRACY Headquarters. Until the early morning hours Technocrats work and plan for America's defense and future destiny. The social analysis of Technocracy is irrefutable. Its synthesis of a modernized social system is buttressed by the best scientific evidence available. If Technocracy is 100 percent wrong, then the worst that can be said about it is that it never did any one any harm. But, if it is correct then God help America, for no other power will be able to, if her citizens do not adopt scientific methods of control.

SINCE JULY 1940, 18 MONTHS BEFORE THE JAPS BOMBED PEARL HARBOR, THE SOCIAL PROGRAM OF TECHNOGRACY HAS BEEN PUT ON THE SHELF. No nation can achieve social changes internally unless it is first free from outside aggression and inside treason. Technocracy warned against the rise of World Fascism as early as 1935, and spoke up repeatedly in the years that followed.

In August 1938, Technocracy presented specifications for the Army, Navy, and Airforce to repel any attempted attack from Atlantic or Pacific, and charged that the military budget of the United States was inadequate. In September 1939, Technocracy demanded the development of a Continental strategy and the planned generalship of all Continental operations for the security of America. In home defense activities, Technocracy has participated to the full. Our Section Headquarters have been used for Selective Service registrations, for first aid classes, and air raid warden work. Technocracy's mobile sound units are used by police and fire departments. On December 7, 1941, Howard Scott, Director-in-Chief of Technocracy, sent a telegram to President Roosevelt in the name of the Organization placing the entire personnel and equipment of Technocracy Inc. at the disposal of the Commander-in-Chief and pledging the unqualified support of Technocracy to the Administration's war effort.

SINCE 18 MONTHS BEFORE THIS WAR TECHNOCRACY HAS BEEN ADVOCATING TOTAL CONSCRIPTION. The trend of events is moving irresistibly toward the perilous postwar period ahead. Total Conscription will be even more necessary than now. If we insist on winning this war at the high cost of Price System methods, we will be in great danger of losing the peace and sacrificing the greater destiny of America to pro-fascism at home unless we adopt Total Conscription of Men, Machines, Materiel and Money, with National Service from All and Profits to None. Total Conscription is the key to America's future. How about it, Mr. and Mrs. America? INVESTIGATE TECHNOCRACY.

TECHNOCRACY

NORTH AMERICA'S ONLY SOCIAL DYNAMIC

WHAT?

★ Technocracy is the only North American social movement with a North American program which has become widespread on this continent. It has no affiliation with any other organization, group or association either in North America or elsewhere.

★ The basic unit of Technocracy is the chartered Section consisting of a minimum of 25 members and running up to several hundred.

★ It is not a commercial organization or a political party; it has no financial subsidy or endowment and has no debts. Technocracy is supported entirely by the dues and donations of its own members. The widespread membership activities of Technocracy are performed voluntarily; no royalties, commissions or bonuses are paid, and only a small full-time staff receives subsistence allowances. The annual dues are \$6.00 which are paid by the member to his local Section.

★ Members wear the chromium and vermilion insignia of Technocracy—the Monad, an ancient generic symbol signifying balance.

WHERE?

★ There are units and members of Technocracy in almost every State in the U. S. and in all Provinces in Canada, and in addition there are members in Alaska, Hawaii, Panama, Puerto Rico and in numerous other places with the Armed Forces.

★ Members of Technocracy are glad to travel many miles to discuss Technocracy's Victory Program with any interested people and Continental Headquarters will be pleased to inform anyone of the location of the nearest Technocracy unit.

WHEN?

★ Technocracy originated in the winter of 1918-1919 when Howard Scott formed a group of scientists, engineers and economists that became known in 1920 as the Technical Alliance—a research organization. In 1933 it was incorporated under the laws of the State of New York as a non-profit, non-political, non-sectarian membership organization. In 1934, Howard Scott, Director-in-Chief, made his first Continental lecture tour which laid the foundations of the present nation-wide membership organization. Since 1934 Technocracy has grown steadily without any spectacular spurts, revivals, collapses or rebirths. This is in spite of the fact that the press has generally 'held the lid' on Technocracy, until early in 1942 when it made the tremendous 'discovery' that Technocracy had been reborn suddenly full-fledged with all its members, headquarters, etc., in full swing!

WHO?

★ Technocracy was built in North America by North Americans. It is composed of North American citizens of all walks of life, Technocracy's membership is a composite of all the occupations, economic levels, races and religions which make up this continent. Membership is open only to North American citizens. Aliens, Asiatics and politicians are not eligible. (By politicians is meant those holding elective political office or active office in any political party.)

★ Doctor, lawyer, storekeeper, farmer, mechanic, teacher, preacher or housewife—as long as you are a patriotic North American—you are welcome in Technocracy.

**Great Lakes Technocrat,
843 Belmont Avenue,
Chicago 14, Illinois**

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After Victory What?

Defeating fascism abroad:

Will not defeat North America's fascist enemies at home;
Nor stop the wastage of North America's natural resources;
Nor halt the creation of new mountains of debt;
Nor check the trend of technological disemployment;
Nor prevent a new and greater depression;
Nor end sabotage of the General Welfare by 'Free Enterprise';
Nor release technology from Price System interferences;
Nor solve North America's primary problem of distribution;
Nor realize the greater destiny of North America.

Defeating fascism abroad is only the beginning of the great task that faces North America. Unless we liquidate our fascist enemies at home we will have waged war against their facsimiles abroad in vain. North America must do the whole job that faces this Continent or go down to defeat against the forces of social chaos.

North America must avert the perilous postwar period ahead; arrest the processes of social instability; provide equal opportunity for all; promote individual security; underwrite a high standard of living; and institute a greater concept of citizenship on the basis of physical democracy.

Technocracy's Victory Program of Total Conscription of Men, Machines, Materiel and Money With National Service From All and Profits to None is the design of Continental operations now called for by the trend of events. Total Conscription can do the whole job.

INVESTIGATE TECHNOCRACY

GREAT LAKES TECHNOCRAT

Nov - Dec - 1945

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Volume III

Number 7

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NOVEMBER-DECEMBER, 1945 ★ VOL. III ★ NO. 7 ★ WHOLE NO. 76

Illustrating the Futility of Price System Methods of Operation; Interpreting the Trend of Events from the Social Aspects of Science; and Presenting the Specifications for Total Mobilization for Peace!

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TECHNOCRACY DIGEST

Social Implications of the Kilowatt Hour

Arithmetical to Geometrical

By Ralph W. Herring

The current flowing in any circuit is directly proportional to the electromotive force and inversely proportional to the total resistance of the circuit. (Ohm's Law)

Therefore, current (amperes) = $\frac{\text{electromotive force (voltage)}}{\text{circuit resistance (Ohmage)}}$ Algebrai-

cally, this is stated as $I = \frac{E}{R}$. The current is equal to the pressure, divided by the resistance.

Translating this into social terms, Ohm's Law can be stated thus: $I = \frac{E}{R}$ where I is the current of social change, E is the impact of technology and R is human inertia.

Therefore, social change = $\frac{\text{pressure of technology}}{\text{resistance of human inertia}}$ Social change

proceeds at a rate proportional to the pressure of technology divided by the resistance of human inertia.

The impact of technology is increasing; the resistance of human inertia is decreasing. Ergo, the amperage of social change mounts ever higher. It won't be long now!

The First Step Is Observation

FOR all but 169 years of the 7,000 years of recorded history and for countless centuries prior to that, man struggled with his environment, eking out an existence that was little, if any, above that of the wild animals who were at once his food, his competitors for food and his deadly enemies. He fought this environment with the strength of his own muscles save for a few centuries just past during which he domesticated animals, contrived sails and a few crude water wheels and windmills.

Save for these few centuries if he succeeded in sustaining life, he did so by sheer force of his own muscle power, plus whatever cunning he could contrive. The club, the thrown stone, the spear, the bow and arrow, the battering ram, and the catapult came laboriously and slowly, impress-

ing him forcefully with the fundamental principle of them all, namely, that he with his own muscle power must supply them all with the energy they required to make them effective.

In this respect he differed from the other animals only in the greater range of effectiveness he was able to impart to his muscle power by means of his crude contrivances. It is true that this enabled him to sustain life more effectively. It enabled him frequently to render some attacking wild beast hors-de-combat before the beast was in a position to effectively bring into play its superior muscle power; or to strike down some prospective prey beyond the actual reach of his arms, but his status never permitted him to forget for a moment that his life depended solely and absolutely upon his own exertions.

The net result of his growing mental superiority over the other animals,

as evidenced by his contrivances to make his own energy more effective, was a longer life expectancy and an increased population, indoctrinated with the concept of the importance of human labor in the process of obtaining the means of sustaining life. It was along about this time that man got his first lesson in cooperative effort. It may have been the discovery that two human beings could more effectively fight off an attacking wild beast or that two could drag to the cave a carcass too large for one individual to manage alone, but he was still impressed with the importance of his own energy.

Nevertheless, cooperation was a great advantage and led to the development of the family group around the cave, the tribe, and with the increasing scarcity of food supply resulting from his more effective methods of procuring food, to the nomadic tribes and migrant hordes. Finally, as the hunting became progressively less adequate, he finally settled down to a more or less stabilized society, based on agriculture.

Throughout all this slow and painful upward trek of the human race, the most impressive thing was the necessity for human toil. Examination of the record of human progress which we have thus briefly outlined here leads to the following observations:

1. That energy was the dominant factor in human progress in the period outlined.
2. That this dominance was fundamental and absolute. (No energy, no food; no defense—death)
3. That the progress made was either the result of
 - (a) An increasing rate of energy expenditure, or
 - (b) an increase in the effectiveness of the application of the available energy to

the desired ends, or

(c) a combination of the two.

At this point, the engineer would want to begin taking measurements. He would want to know something of these rates of energy conversion in terms of scalar quantities. Being neither philosopher, politician, nor business man, the engineer would adopt the scientific method.

The Second Step Is Research

And so, like C. M. Ripley of the General Electric Company, the engineer proceeded to find out about the capacity of man to convert energy into work. Ripley started out, as all competent engineers do, by engaging in research to find out what was already known.

He found that engineers throughout the centuries and in many lands, have measured, in foot-pounds or other units, the work that all kinds of laborers can do in one day. He found that they have done it in England, Scotland, France, Egypt, and China. They have done it in Germany, Russia, Italy, Greece, Sweden and Norway, and they have done it in the United States and Canada. Wherever engineers have carried out their projects, they have made these measurements. These measurements include lifting weights by hand, by hod, by wheelbarrow, by rope and by pulley; also turning cranks, shoveling, towing canal boats, hammering, sawing and pushing on a capstan.

Of all the engineering reports examined, they were all unanimous in one respect, namely, that, regardless of race and climate, in Orient or Occident, in this century or the last, not one engineer ever found any man, either laborer or athlete, that did the equal of 1 kilowatt-hour or 2,655,200 foot pounds of work in a day,

and some men worked as much as ten and even twelve hours per day, as in China and Egypt. In fact, the day's work averaged only 28 percent of one kilowatt-hour, or only 280 watthours. Far less than the 746 watthours in a horsepower hour.

The Third Step Is Experiment

The engineer was not satisfied with this. He checked the reports by another scientific method. He experimented. He made measurements of his own. He built a stationary bicycle that drove an electric generator. He pedalled it hard for one minute and was breathless, and found that the electric energy he had generated was worth 1/40 of a cent, or the price of one safety match. As a converter of energy, he wasn't so hot; but what about a stronger man?

He took it to Madison Square Garden and had a champion six-day bicycle racer pedal it for one minute in a desperate sprint. The meter showed .0018 kw. hr. If he and his teammate could have kept up this desperate sprint for six days and nights, they would together have generated 15.552 kw. hr. of electricity, worth about 78 cents, a very poor showing for a week's work for two famous athletes.

At the Better Homes' Show in Billings, Montana, 213 people rode this machine until they were tired and their combined work was 2½ kw. hrs., worth 10 cents.

Finally, the engineer set up a hand-driven generator operated by a crank. It was specially built to get the highest possible efficiency. The capacity was 60 watts. Few men turned it more than a minute. The strongest man that could be located in Schenectady, a former pugilist, was offered \$12 an hour for as long as he could keep the 60 watts of lamps burning by turning the crank. He quit, exhausted in

just 13 minutes, and when reminded that he was making \$96 a day and asked why he quit, he gasped, 'The money wasn't worth the work.' He had exhausted himself in converting the energy equivalent of 1.3 percent of one kilowatt-hour.

Research and experiment had shown that what workmen could do varied from 9 watts in one of the hod-carrying jobs, up to 72 watts rowing and pushing on a capstan. The average power which a man can exert all day is 35 watts.

Thus we find that throughout all these countless centuries the energy available for the procurement of the necessities of life was of the order of 1/20 horsepower per capita, and the emphasis on human energy was unbroken, save for a single event, the discovery of fire.

Social Change Began With Fire

Here, man had for the first time a means of converting energy for his own use without first eating food, converting it into chemical energy and then converting the chemical energy into work through the agency of his muscles. Today, it is this ability to convert extraneous energy (energy from coal, oil, gas, wind, and falling water) to his own uses that distinguishes man, more than any other thing, from the other animals.

The discovery of fire gave man not only heat, it also gave him a measure of additional protection from wild beasts. It enabled him to live in more rigorous climates, thus spreading his tribe over a larger geographical area. It cooked his food and gave him added comfort which resulted in an increased population, but it did not relieve him from toil.

During all these thousands of years, the energy input into human society was limited to the low order of magni-

tude of man-power. Any increase in energy input was predicated upon a corresponding increase in human employment. Man lived in an environment of scarcity. Surpluses were non-existent. The social system was in a state of equilibrium. It was stable, and almost static.

A graph representing the physical state of the social mechanism throughout this period would be an almost perfectly smooth flat line, curving just perceptibly upward as man settled down into his agrarian society, broken only by the slight upward movement which resulted from the impact of increased energy conversion following the discovery of fire. (*Ed. Note: See chart in middle of book*)

This was the first indication that a change in the rate of converting energy might have an effect upon the stability of any given social mechanism. It still remained in dynamic equilibrium with its physical environment. There were none of those forewarners of trouble, so familiar to engineers, uncontrolled oscillations.

Enter The Price System

With the greater assurance of a food supply which came with the establishment of a society based on agriculture, man began to specialize in the techniques of producing a living. The introduction of the concept of exchange was a natural outcome of specialization of labor, a physical factor. Since virtually all production could be accounted for as the result of human toil, a system of commodity evaluation based on scarcity and man-hours of labor grew up.

During this state of society, any increase in production necessitated a corresponding increase in man-hours. As long as man-hours were the chief means of production, this concept was valid. Thus, it was possible to effect a system of exchange on the basis of

man-hours of labor for purchasing power, plus the factor of scarcity.

Concurrently with this, a folklore and religion developed based upon the apparent virtues of human toil. This concept has dogged the human race to this day, to political and economic crisis, to the very brink of disaster.

This system of effecting exchange on the basis of commodity evaluation did not at this time alter the relationship between man-hours per unit of production and total production. It brought no increase in the rate of energy conversion. The philosophy of 'Earn thy living by the sweat of thy brow' and 'Work hard and success will surely follow' grew up on the assumption that this was a permanent state. Alas, man's environment is dynamic. Change itself is the sole possessor of the characteristic of permanency.

We have made the mistake of assuming that it is a natural law that the creation of real wealth bears a fixed relation to human toil, whereas in reality, *physical wealth is created by the performance of work regardless of the source of the energy involved.*

The hour of destiny arrived in the year 1776. It was not July 4, 1776, but March 8. On that date, the firm of Boulton and Watt tested the first practical single-acting steam engine in pumping water out of a coal mine, and it worked.

For 7,000 years previous to that date the soldiers of Alaric and Attila, of Genghis Khan and Hannibal, of Alexander the Great and Charlemagne, and all the other great and near great, conquered and reconquered the known world and passed on to their reward, leaving both victor and vanquished as they had found them, with their measly 35 watt capacity. The tools of social change, despite the pomp and fanfare and the spilling of human blood, were not at hand.

On March 8, 1776, the firm of Boulton and Watt wrote the death sentence of the Price System in America. Technology, the tool of social change, was at hand. The means of converting energy from fossil fuels had been discovered.

Enter North America

Given an area large enough and homogeneous enough and with sufficient resources, the impact of increased energy conversion was destined to set up oscillations that would wreck any system of social control based upon human toil, scarcity and the exchange of goods and services at a price.

Such an area existed on the Continent of North America. By happenstance of nature, this continental area had been endowed with all the requirements for the development of a high energy, technological civilization which could produce an abundance.

No longer was the destiny of the people of North America linked to a 35 watt capacity. From that time on, things happened fast and furiously.

On August 30, 1831, Michael Faraday discovered electromagnetism and in no more than ten full days of application this master of method and research had produced the world's first electric generator. On September 4, 1882, with the opening of Edison's Pearl Street Station in New York City, the march of kilowatt-hours was on its way.

By 1920, the annual electric energy produced in the U. S. had reached the sum of 43,334,282,000 kilowatt-hours. By 1940, it had advanced to 144,984,565,000 and the end was not in sight. The year 1943 saw 220,969,521,000 kw. hrs. produced. This was an energy conversion rate of 4.48 kilowatt-hours per capita per day, or an increase of 1,600 fold in

169 years from electric energy alone. Vast amounts of energy not converted to electric power were also produced, such as that from steam, oil, gas, etc.

Guy With The Missing Brain

Upon examination, we find ourselves engaged in the absurd attempt to make 280 watt-hours per capita (generating capacity of the human body in an 8 hour work-day) equal more than 4.48 kilowatt-hours per capita (actual amount used). Our Price System economists are still juggling the figures in a vain effort to make them come out even. Our concepts of toil, etc., do not jibe with the physical facts.

The old-rabbit-in-the-hat trick of government deficit spending has so far been the only way of balancing the equation. Economists borrowed it from the magician and it is phony. Besides, every time the economist pulls a rabbit out of the hat and puts it on the low side of the equation, the engineers build a new power house and put it on the other side.

Those at the controls of our social system have no more understanding of the physical phenomena involved than the saloon keeper who called the Electric Company to thaw out his frozen water pipe. The company sent the truck with the low voltage transformer used for this purpose. On arrival the men connected the transformer to the power supply and the water pipe, and in five minutes the water came gushing through, whereupon the man in charge asked the saloon keeper for \$10, the standard charge for this service. The saloon keeper protested that \$10 was too much for five minutes' work and refused to pay. The serviceman was resourceful. He stepped to the door and called out in a loud voice to his assistant, 'Reverse the connections, Bill, we will have to freeze him up again,

he won't pay!' At that, the saloon keeper rushed over and paid the \$10.

There Is No Balm In Gilead

As we look back from our vantage point of 1945, we find that our social mechanism has been developing the dread phenomena of oscillations, which increase in both frequency and amplitude with time. We do not see the rhythmic rise and fall of good times and bad, which economists claim to see. We see a condition similar to an ever-accelerating flywheel, with a weight of 35 watts on one side and 4.48 kw. on the other, while some one stands by and continually adds weight to the heavy side.

Every engineer will recognize the oscillations set up as the type which become progressively more violent, until certain physical limits are reached, at which point sudden disintegration of the system takes place. (Ed. Note: See Chart in middle of book.)

There is no such thing as reaching a maximum and leveling off or a gradual diminishing of these oscillations, without altering the physical factors.

We have tried to give you a picture of the revolutionary change which has resulted from the displacement of man-hours of labor by kilowatt-hours. These changes have produced three well-defined, long term trends:

1. Increasing production of goods and services.
2. Decline of man-hours per unit of production.
3. Decline of total man-hours.

The social implications of these trends are:

- a. Actual production of abundance of farm products and the materials for war.
- b. An enormous potential abundance of consumers' goods

and services, if and when war-born technology is converted to peace-time consumers' goods production.

- c. Diminishing total of man-hours of labor to be exchanged for goods and services. Less purchasing power. Less consuming privileges for a greater number of American people.
- d. Abundance destroys value; therefore, abundance cannot be exchanged for a price.
- e. There is a conflict between the physical realities of modern power-driven technology and the antiquated social-controls of Business and Politics. The casualties of this conflict result from malnutrition, slum housing, inferior clothing and other products, low standards of health, etc. It all sums up to insecurity and scarcity in the midst of potential security and abundance.
- f. This conflict is fast approaching a crisis. If not resolved, the inevitable result will be chaos.

The Evidence Speaks To All

The march of kilowatt-hours is threatening the existence of antiquated laws, customs, habits, values, political and economic concepts born of hand-tool, human toil conditions existing in the dead past.

Social change is imminent. The question is, will social change take place in a smooth, orderly manner, under scientific direction, or will we enter a chaotic period in which all that we consider useful in modern American civilization will be destroyed, along with a large fraction of our population?

This picture of changing states of energy-conversion and its social implications is indeed frightening. We didn't paint it. Facts painted it. Technical men engaged in the design, installation, maintenance and operation of electrical equipment will understand this picture, and they will realize the futility of expecting the gentlemen of politics and business to understand much, if any, of these phenomena and social consequences of power production. Not understanding these problems, it is futile for them to attempt a solution.

The responsibility of solution rests with the technically trained men. They alone are equipped to read the warning signals and facilitate social change.

We urge you to get acquainted with your Technocrat friends, study their data and blueprints, and act before it is too late.

Author's Note

In preparing this material for publication, it was decided to include two charts which are important. One is a graph of the pig iron production in the U. S. (*Ed. Note: See graph on*

page 20), and the other shows the growth curve of electric power production in the U.S. from its beginning through 1944. (*Ed. Note: See curve on page 20*)

Pig iron was chosen because of its basic nature in the technological civilization of America. It is probably one of the best, if not the best, indicators of physical production of any single commodity on the North American Continent, and displays the characteristic increase in both amplitude and frequency in its oscillations as shown in the theoretical curve chart of Fig. 1. (*Ed. Note: See chart in middle of book*). Thus, we have an actual concrete example of the phenomenon under consideration. The electric power production growth curve was included to show the nature of the increase in energy conversion on the North American Continent.

For a combined curve of a large number of commodities and services which gives a highly accurate picture of overall physical production on the North American Continent, see *Technocracy's Basic chart, Physical Trends Shape Americas Destiny* (*Ed. Note See Technocracy's Basic chart on page 19*).

Now I'll Tell One

'I believe automobile manufacture will start right where it left off for war work four years ago. Then the changes, if any, will be dictated by the public—whether it be faster cars, lighter cars or cars with larger luggage compartments. We'll try to give the public what it wants.'—Charles F. Kettering, vice-president of General Motors, in an address before the American Automobile Association in Chicago, Nov. 11, 1944 (As reported in the *Chicago Daily News* of the same date).

'Doubtless the results of these public opinion samplings will be digested with

interest by those responsible for the design of motor car bodies, but it is not likely they will be taken too seriously for the industry is well aware that cars are designed primarily to sell, and thus the appearance of the product on the sales floor may be of more importance than the minor annoyance of some owner over the shape of a window lift handle. There is a certain amount of aloofness between designers and the public, the former often feeling that buyers will take whatever they, the creators, decide is good for them.'—A. H. Allen, Detroit Editor of *Steel* in the Jan. 15, 1945, issue.

The Engineer's Worth to Society

By Albert G. Conrad, Chairman, Department of Electrical Engineering, Yale University

Reprinted by Permission of *The Yale Scientific Magazine*
Winter 1942

AT no time in the history of our country has our social order been so totally dependent upon science and engineering for its own preservation than in the present crisis.

It is not my intention to emphasize the importance of electrical engineering in this presentation. The aims of all branches of engineering education are the same. Any reference that I use in the electrical field is used only as an example. My interests are not limited to electrical engineering only. After teaching electricity for 15 years I have come to the conclusion that electricity as electricity is a most worthless form of energy. It is not found in nature in quantities that can be utilized industrially. The most powerful lightning strokes that split trees, shatter buildings and create terrific noises, if converted to electrical energy and sold at the rate that is charged by our local power company, would be worth approximately 40c per dozen. It is possible to obtain a small amount of electrical energy from the junction of two dissimilar metals at certain temperatures, but the amount obtainable is too small to consider such an arrangement a source of industrial power. Electricity is generated in the cells of living tissue. The presence of a cancer is apt to cause this voltage to be higher than the voltage of normal tissue. However, this higher voltage cannot be used as an indication of cancer. Poison ivy, mosquito bites, can produce similar changes. All of these voltages are small and usually amount to a few millionths of a volt.

Human Output

The mechanical output of a man is many times larger than his electrical output. A brawny athlete, when working at full capacity can do approximately the same amount of work in a day as 1/10 h.p. motor working during an equal interval. This energy evaluated on the basis of the energy rate of one of our local public utilities would be worth approximately 4c per day. Of course this is not all of the mechanical output of a human being. At rest the average person radiates heat at about the same rate as a 70 watt lamp. This radiated energy is worth about 7c per day. The total energy output of the average individual is therefore worth approximately 11c per day. The average person eats approximately \$1.00 worth of food per day. In return the best that can be expected is 11c worth of energy. The efficiency is nothing for the human race to brag about.

How then can a civilization exist when our consumption is so much greater than what we ourselves are able to produce? The answer is simple. We are a bunch of parasites. We are living on what we can get out of the storehouse of civilization and our most generous benefactor is mother nature. She has placed coal in our hills, oil in our sands, and water in our streams. These, our natural resources, are the things that permit us to enjoy a standard of living that our ancestors never dreamed of. The importance of these

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Electricity Knows No Bounds

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January 1945 (*Italics ours*).

ELECTRICAL ENGINEERS have no misgivings about the future as far as their own work is concerned. They feel confident that the future is going to flow from the past without interruption and with increasing acceleration. *Electricity is the common denominator of everything in the Universe* and they know that they can make it do anything they want it to do.

Electrical engineers work through the natural laws which govern the workings of the Universe. While these laws are inviolable they are not necessarily limiting. Only man made laws are limiting. As aptly expressed by David Prince of the General Electric Co., nature's laws are partly for the purpose of directing us to the things we can do instead of limiting us to the things that we cannot do.

Some of the things with which electrical engineers and electrical scientists are working with are truly appalling in their ultimate effect on the human race. We know what such things as radar are capable of, we know something of what it means to be able to drop from two to four thousand tons of bombs on the enemy in a single day, and we also know the devastating effect of a pilotless robot plane carrying a ton of explosive when it hits a densely populated center. But we do not know exactly what it would mean if we should find out how to isolate, say 5 pounds of uranium 235. There have been vague reports that the Germans have been working on an atomic energy bomb. No doubt this is true but it does not mean that they have succeeded in producing such a bomb. We, also, have

been working on developments of this kind and while it is unlikely that such weapons can be perfected for use in this war, it is not for us to say that they will not be available for a third World War if we are foolish enough to let the politicians lead us into a third war. Such a development would all but finish us. A medium size atomic bomb would wipe out London or New York and in the language of Shakespeare, "leave not a wrack behind." Irving Langmuir, Nobel Prize winner in physics pointed out not very long ago that a quart of electrons separated from associated protons and neutrons would expand with an energy equal to the explosion of a cube of TNT 500 miles on a side, reaching from London to Berlin! National sovereignties become meaningless in the face of such prospects.

They are not pleasant prospects but they are unpleasant only because man can make them so. There is also a pleasant side. Many people throughout the world, now, are worrying about the eventual exhaustion of our oil resources, and this goes for coal also, although coal will last much longer than oil. But if we can learn how to separate electrons from protons there will be no reason for us to be concerned for then we will have a potential supply of energy where one pound of material will give us two billion times as much heat as there is in the best high octane gasoline.

A few years ago, there was considerable discussion in engineering circles about the possibility of direct-current transmission of power. At that time, the problem of overcoming instability on long a-c lines had not

been solved to the extent that it is today and direct current at high voltage offered definite advantages. This is still true today and today we are much further along toward the ultimate carrying out of the d-c transmission idea. *With our high power electron tubes of the present day it would be quite within the range of possibility to build a high voltage d-c transmission line if we wanted to do so.* It is not certain that we want to do so but it could be done. As a matter of fact a short high-voltage d-c transmission line has been in commercial service for a number of years with excellent results.

Today, however, a new possibility exists. We have learned how to transmit power at high frequencies for considerable distances without wires by the use of wave guides. Microwave "plumbing" it is called. So far, this method of transmission has been used only in the communication field but who is to say that the principles involved in this method of transmission will not, some day, be used for heavy power purposes? By this method it is possible to transmit electric power through a rubber hose.

Modern electron tubes have a much more immediate application in the power field than that involved in d-c transmission, i.e. in the conversion of a-c into d-c for control purposes. One of the things electrical engineers have been working on ever since a-c transmission came into general use was an a-c motor that had speed characteristics equivalent to those of the d-c motor. All sorts of ideas were tried, all sorts of makeshifts improvised but no a-c motor, however good, ever was quite as good as the d-c motor in respect to its speed characteristics. Today, however, we can take alternating current of any frequency, convert it to variable frequency for use in a synchronous motor or to direct current for use in an

ordinary d-c motor. In other words, today, because of the electron tube, we can operate d-c motors from the a-c lines. As yet, equipment for controlling motors in this fashion is available only in comparatively small sizes but there is nothing in the idea to prevent its use with the largest motors in use—all that is needed are larger tubes.

During the past year there was installed in one of the large steel mills an electron tube frequency changer with a capacity of 20,000 kw. As described in the December 1944 issue of *Power Plant Engineering*, this unit is designed to exchange power, reversibly, between 25-cycle, 44 kv and 60 cycle, 69 kv systems. Now, 20,000 kw is still comparatively small compared with the power of a 160,000 kw generating unit but it is anything but chicken feed. If we can make a 20,000 kw electron-tube converter, we can make a 100,000 kw unit—it is merely a question of whether we want to do so or not. The day of the rotary converter is about over and nobody will be sorry because they have been sources of plenty of trouble. This does not mean that no more rotary converters will be built; it does mean, however, that increasing attention will be given to electronic conversion.

As has been pointed out in these pages frequently in the past few years there is nothing particularly new about electronics except that, at long last, we are beginning to apply it. Take the case of high frequency heating; this was developed in the laboratory over 20 years ago. In the early twenties it was possible to surface harden small steel parts by means of high frequency currents generated by electron tube oscillators. Only during the last four or five years has this method come into active commercial use. With it, we can take the outside of a metal part, heat

it to red heat and chill it again in so short a time that only the surface is hardened. Or, if we want to heat the interior of a body we can do it easily and quickly by similar methods without disturbing the outside of the body. In all these things we have made only beginnings. They will be developed and extended in countless ways.

In the field of measurement and instrumentation, electricity can do anything we require. We can measure distances of a billionth of an inch or speeds within a fraction of a per cent of the speed of light. We can measure electric currents of six electrons per second. By means of the photoelectric recorder, we can record variation in currents measured in microamperes as easily as, a few years ago, we could record currents measured in amperes.

Electricity is also doing things which formerly were done largely by the human brain. In the oil refinery processes, for example, there are processes where hundreds of valves have to be opened and closed in proper sequence. The intervals involved are so short and the multiplicity of the operations so great that it is no longer possible to do them manually, so electric brains have been developed which do all these things in perfect sequence and with absolute accuracy.

In some fields, electricity has all but replaced our very thinking processes. Consider a machine developed jointly by Harvard University, the International Business Machine Co. and the Navy during the past few years and now in operation in the solution of complex mathematical problems. This 5-ton mathematical robot can solve any problem in applied mathematics put to it with results reading to 23 decimal places. It actually consults logarithmic and other functional tables. It is powered by a 2-hp motor, works 24 hr a day, 7 days a week and never asks for time-and-a-half. Addi-

tion and subtraction takes the machine 0.3 second; multiplication, 5.8 seconds; division, 14.7 seconds. In a period of 19 hr. it solved a problem which had required 3 weeks work by 4 experts using ordinary office calculating machines. In some ways, this algebraic superbrain is one of the most remarkable inventions to come out of the war. (Ed Note: See *Great Lakes Technocrat* May-June 1945 issue, page 34)

In some fields of electrical engineering it might seem that we have gone about as far as we can go. We have generators and transformers so high in efficiency that unless we do away with the law of conservation of energy we cannot expect to have much further development. Transformers have been built with efficiencies better than 99.5 per cent. What more can we ask for in this direction? Not much, true, but as David Prince has pointed out, we can still make transformers and generators smaller and we can develop new materials to make them better in other ways than merely increase their efficiencies. We are learning how to make them faster and cheaper and so, more available to mankind. For the first time in history we have 30,000 hp steam turbines in quantity production; at the same time we have *reduced the number of man-hours to make one of these units to 71 percent of what it used to take before the machines were standardized.*

As far as future progress is concerned, from a technical standpoint there is practically no limit to what we will be able to do if we want to do it. The war has brought this home to us as never before. *Many technical developments are held back merely by the fact that a small group of people cannot make any money out of them.* That happens to be the case with television. We could have excellent television today, indeed we have it, but its commercial development is held

back by a sort of vicious circle involving on the one hand, the buyer of television receivers and on the other hand, the buyer of television service. Unless there are enough television receivers installed in the homes throughout a certain area, the television broadcast stations cannot get sponsors to pay for television programs. Conversely, unless the public is assured of satisfactory television programs, people are

not inclined to purchase television receivers at a price of from \$200 upwards.

What is true of television in this respect is even more true in many other branches of the electrical art. So far we have barely scratched the surface in the use of electricity but we need something in peacetime, comparable to what we have in war to make us develop these uses.

ENGINEER'S WORTH TO SOCIETY

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resources is not limited to their effects on our standards of living. National resources are a far greater factor in deciding the supremacy of nations than dynasties or conquests. It is the lack of these resources that has made some dictators aggressive for additional territories and at the same time in other parts of the world the scarcity of these resources has limited aggression more than peace treaties. The date at which these resources are being used is appalling. In some parts of the world they are practically exhausted. We in later life will probably regret having used them so lavishly at this time. And in spite of the fact we are doing nothing to conserve them. Thrift is inconvenient.

Potential Power in the U. S.

We, in the United States, are particularly fortunate in having $\frac{1}{2}$ of the world's coal supply, or approximately 3,830,000,000 tons. This is no small pile of coal. What is it worth to us? If this coal is converted to electrical energy and sold for 4c per kw. hr. it would bring a return of approximately \$300,000,000,000. This is about 30 times the gold supply of the entire world. The United States has 26,700,000 h.p. of water power avail-

able. This is $\frac{1}{6}$ of the world's supply. What is it worth to us? Converting it to electric energy and selling it at 4c per kw. hr. would bring an annual return of \$5,000,000,000.

The value of anything depends on the use to which it can be put in supplying man's needs. Our coal had little value 70 years ago. People did not realize its value as a fuel. But through science and engineering this worthless black deposit has been made to have a value of \$300,000,000,000. This represents the creation of wealth. This is engineering. The engineer creates wealth. The economist attempts to control its distribution. He does not create it. These natural resources have provided wealth. The standard of living in the United States today is directly dependent upon the intelligent and continued use of these resources. It has been said that electricity in modern life is second in importance only to food and shelter. If we were to open the switches in our power plants, our modern machines would be worthless. Our refrigerators and heating systems would cease to function and elevators would stop between floors in darkened shafts. Fire and police systems would be inoperative and crime would be rampant

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When the Lights Went Out

Truth Is Stranger Than Fiction

By J. Cozzy Graham

Within the very near future, North America will be faced with the most serious crisis in her entire history. Technocracy seeks to avert this crisis. For the last twelve years Technocracy has correctly analyzed America's problems and indicated that this condition would arise. This is not mentioned in the spirit of 'We Told You So,' for 'Technocrats are no smarter, neither are they any dumber, than other Americans. They differ mainly in that they approach America's major problem along a new pathway, the pathway of Science. Technocracy IS Science applied to the social mechanism. In that sense we are Pioneers. We have no antecedents to show us the way, nor any precedents to guide us. No one has ever been over this path before.

In The Beginning Was Energy

HERE are probably the only technical statements we'll make in this entire article:

Energy is the capacity to do work, whether in the food we eat or in the form of coal, oil, gas or waterpower converted through technological equipment.

It is by the continuous flow of energy that we live. Shut off that flow and we perish.

The greatest cause of confusion amongst the leaders of Party Politics, Corporate Enterprise and the population in general is their complete ignorance of the kind of a physical world in which we live today.

What does this imply? Let's see if we can illustrate with a few notes from the diary of an average man or woman:

Arose this morning, pressed switch button on wall; presto, there was light. Under the shower, manipulated a couple of faucets; presto, hot and cold running water. Flushed toilet; more water. Down to breakfast, hot coffee steaming on electric

percolator, toast browning in electric toaster, fresh cream from electric refrigerator. Turned radio on the newscast. Remembered to call office, dialed phone, instantly in communication with my party. Got into my car, put key in switch, gas tank full, stepped on starter, shifted lever, on my way.

Arrived at plant; brightly illuminated with fluorescent lights; assembly line in operation; conveyors moving overhead; motor carriers scurrying all around the place; bustle of activity.

Went into office; boss talking over intercommunication system, girls operating comptometers, teletypes and other devices.

But why go on; it's all in the day's work. Correct! And so easily taken for granted. Do we know what makes this type of civilization possible? It is the continuous flow of energy transformed through technological equipment. Nevertheless, we remain blissfully ignorant of the character of this complex mechanism.

We concern ourselves only with its control and operation as an academic

subject, or else as it concerns a monetary or political struggle for advantage. Who operates it, where and what is its motivating power, when is it oscillating? These things never concern us. Only when the lights go out are we momentarily aware of how utterly helpless we are without it.

Energy Is Still The Beginning

The people of Kansas City experienced a few hours of chaos on September 17, 1941, when their city was paralyzed by a power strike. The editorial writers could find nothing more significant to write about than the reprehensible behavior of the power plant operators. They missed the bus completely on the social meaning of the important of power.

On December 12, 1939, 12,000 families in Regina, Saskatchewan, found themselves seriously inconvenienced for several hours by a shutdown of their power plant. Darkness blanketed the interiors of buildings, water taps produced just a 'gurgle' as lack of power reduced pressure in water pipes. Hygienic facilities were seriously handicapped. With no other facilities available, toilet bowls filled. The only outdoor privies were well on the outskirts of the city beyond the water mains.

These two examples are picked from amongst many such incidents. To the uninformed these events are nothing more than conversation pieces. To the informed they are indicators of the radical change in the structure of our Social Mechanism. They are advance notices that a new type of control, conforming more nearly to these physical factors, is imperative if we are to survive a period of crisis.

How real the danger is can readily be understood by reconstructing the authoritative reports of the following incident.

Technology Is Tenuous

On January 15, 1936, the Consolidated Edison Company of New York City ran this advertisement in the New York *Herald Tribune*:

"NEW YORK CAN'T STOP"

Imagine what would happen if some disaster destroyed one of our generating plants and we had no other? Imagine being marooned on the 50th floor of one of New York's skyscrapers if there were no reserve electricity for emergency!

New York must always have ample reserves. That is why we have 7 great generating plants, strategically placed about the city and all interconnected so if any should fail, the others may be called upon. Thus, the essential character of utility service is preserved. . . . That is DEPENDABILITY.

The Edison Company meant well, but before that day was ended, New York was to experience an event which made a dramatic mockery of that ad.

The Hell Gate Power Plant, second largest in the world, supplies power for all of Manhattan north of 59th Street, the entire Bronx, and part of wealthy Westchester County. In this area are located approximately 500,000 offices, apartments and homes.

The Central Control Room of the station is at 40th Street and Ave. A. The walls of this room are covered with hundreds of dials and lights. Before them sit three shifts of engineers working night and day. This is the Control System which directs the distribution of power (energy). In accordance with the flutter of a dial gauge or the flash of a light, these engineers can tell where power is needed or where too much is being supplied.

By direct wire and phone connections with each generating station, they increase or decrease that plant's output as required. The heart of the Hell Gate plant is the Buss Bar, 400 feet of pure leaf copper, 6x8 inches thick. It is divided into six sections, each separated from the other by concrete walls and double steel doors. Forty feeder cables feed up to this Buss from the eight turbines in the basement. The power is then distributed to the City of New York from the Buss, like a great heart pumping out life blood through the arteries of a Giant.

At 4:00 p.m. of that day, everything in the plant was running beautifully. The giant turbines in the basement howled louder and louder, as each minute the control called for more and more power, and the power was being supplied. At 4:16 p.m., the fireworks literally started without warning. Sitting before the central control panel down at 40th Street, the engineers were startled by the flash of green light. Green meant open switches.

The Veneer Is Very Thin

The 6-6-3 signal, the worst signal in the code system, flashed on. This was the SOS. It meant that every switch in the giant plant had been blasted open. What had happened? It was reported that a short circuit occurred in one of the feeder cables leading to the Buss Bar. Power flowing through the 'fault' created intense heat which burned off the insulation covering the cable. The oily substances in the cable were volatilized, creating a powerful gas, which so reduced the insulation effectiveness of the other cables that short circuits occurred in five of the six sections. The gas was exploded by the crackling arcs of electricity.

Concrete walls blew out like paper, copper bars were burned off and

twisted, steel rods burned like candle wicks. As one writer put it, 'Hell Had Broken Loose At Hell Gate!' With power and light gone, an emergency conference was held at the city hall. All available police and radio cars were dispatched to the northern part of the city to prevent looting, riots and traffic snarls in the darkened areas. Twenty police stations were without lights or power, their teletype systems and radio cars helpless. Traffic lights were dead. Two hundred and fifty Department of Park trucks were rushed to important intersections to train their headlights wherever they could be of use.

Thousands of flares were placed along park driveways to guide cars and protect citizens from thugs and attackers. On Broadway the streets were jammed solidly with a tangled mass of honking cars, unable to make headway. The cold January rain fell in a drizzle, turning the streets to sheets of glare ice. Pedestrians could not cross the streets without the aid of police flashlights.

At the Parkway Hospital, an emergency administration of oxygen was given to a six-year old boy critically ill with bronchial pneumonia, two doctors working by the light of *matches* for nearly one hour. An emergency gall bladder operation was performed by the light of candles and a plumber's flashlight. Up to midnight, the nurses made their necessary rounds by the light of candles and matches. It required no great imagination to picture the danger of fire and panic.

At St. Elizabeth Hospital a delicate eye operation for glaucoma was completed entirely by flashlight. While at Columbia Presbyterian Medical Center a newly born babe first saw the light of day in total darkness.

The New York Foundling Hospital was having its moments. It was bathing time for many of the babies and

scores of them started howling simultaneously. Nurses groped and collided with each other in their desperate search for matches and flashlights. Elevators were stalled and could not be used to carry food, patients or doctors.

Refrigerators, which kept the bacteriological test tubes at constant temperatures and the food and milk from spoiling, stopped operating. Radios, which might have kept the patients calmed, went dead. Fear of fire kept every one in a cold sweat.

'—But Three Short Days Apart'

Gas had accumulated under the streets as the overloaded cables burned out and manholes blew sheets of flame skyward with a roar that could be heard for miles. Bakers, commencing their night baking for the next day's goods, found themselves helpless as the electric blowers to the ovens could not be operated. The telephone company experienced its share of the chaotic scene, as seven of its exchanges were disrupted. The rest were swamped by more than 500,000 extra calls from those trying to find out what had put New York in darkness and by the frantic efforts of families trying to contact their members.

Hotels and apartments, ranging from 25 to 50 stories, were crippled. They found themselves without water, refrigerator or elevator service. There was no electricity to keep their oil burners going. More than 80,000 movie patrons sat in the darkened theatres, expecting the show to go on. They were finally given refunds. Amateur and professional pickpockets were having a Roman Holiday in the department stores. The managements finally dismissed the clerks and closed up shop. There weren't enough candles to supply one-tenth of the demands, and the price of candles rose to as much as fifty cents each.

Thugs were having an easy time of it as their victims could not identify them. Below ground in the subways, tens of thousands were trapped in the stalled trains; the ventilation system stopped functioning and the air became stifling. Yet the trainmen dared not permit the passengers to walk to the nearest station. It would mean death to any who stumbled against the third rail if the power were to come on suddenly. Later, as power was partially restored, the trains slowly proceeded to the stations. The passengers swarmed out into the still darkened platforms which were jammed with those who sought safety from the darkened streets above.

Police tried to keep people from entering the blackened subway stations. Entrances were roped off. Men and women fought back. They insisted on trying to slip by and enter the already jammed subways. They were told there had been a power break and the subways were not running. One persistent dumbhead said:

The subway not running? Nonsense! It's never happened before, has it? Well let me by or I'll report you.

Engineers To The Rescue

Back at the Hell Gate Station, the technicians worked feverishly. The right men were in the right places, and by 5:15 p.m. had most of the disabled Buss Bar working so it could distribute power again. The biggest problem was *still* to be solved. How to get that power back gradually to the northern half of Manhattan. An electrical system is stopped easily enough but not so easily started up again. Like a stalled car, it must be started up gradually. You can't put a stalled car in high and give it the gas. She'll just stall again. Similarly with an electrical system. When the lights or

radio go off, it is not customary for people to turn off their switches. When the power went off at Hell Gate, hundreds of thousands of light, radio, refrigerator and other types of switches were left closed. These acted in similar capacity to full throttle of the stalled car. When the power was put back on with all these closed switches, the system stalled.

Fuses blew out, transformers burned out, cables melted and manhole covers exploded to the sky. At the sub-stations, the switches tripped out automatically. Three thousand additional Edison men were hastily called to go into the darkened basements of buildings and unscrew fuses and pull switches wherever they could find them, so as to pull down the load.

In an attempt to get the power back on, so many fuses were blow that the total available supply of the company was used up and emergency calls were sent to unaffected counties, and even these were insufficient. Telegrams went out to fuse equipment manufacturers to put on a night shift and rush delivery. By dawn, power services were restored to normal. Electrical energy was again flowing over the lines of New York City.

The Storm Signals Are Up

New Yorkers had temporarily experienced chaos. One writer reported that New York had found out that it was the most vulnerable island on the Continent. He missed the obvious fact that **ALL NORTH AMERICA IS PUT TOGETHER THAT WAY!** This Continent is a high energy converting mechanism. Our present American civilization and the existence of 150 million Americans is made possible *only* by the rate at which we in America convert energy. Without this and the necessary industrial metals and other natural resources, our American

Way of Life could not survive *regardless* of whether the form of government were republic, communist or corporate state fascism.

A major disruption of the flow of energy would, within a period of thirty days, place the lives of 90 percent of the population in jeopardy.

For eight years prior to our entry into the present war, Technocracy warned the people of America that the indicators which it studied were flashing 'Danger' and warning that our entire social mechanism was in oscillation. A reading from one of these basic industrial indicators. 'Pig Iron Production' may be enlightening. (Ed. Note: See chart on page 20). The first major oscillation occurred in 1893. From peak to trough, the drop in production was 27 percent.

The second occurred in 1908. That drop was 38 percent. The next oscillation in 1921 dropped 57 percent. From the highest peak in 1929, the drop was 79 percent. As production reached a new high after each depression, the succeeding drop was 30 percent greater than the one preceding it.

In 1929, pig iron production was approximately 46 million tons; last year's production was 90 million tons. In 1929 we could not sustain our much smaller rate of production and the resulting down sweep took us to within 21 percent of complete shutdown. There is no known method within the framework of a Price System that can sustain the present high level of production. It is not possible in a Price System to stabilize a 'Boom.' All 'Booms' have ended in depressions.

The deficit spending of the U. S. Government has kept us from hitting bottom since 1929. We are living on borrowed time. The combined efforts of party politics and corporate enterprise proved incapable of raising the level of employment to that of 1929.

New Tools For A New Job

Only the pressure of a total war was able to accomplish what the dominant controlling interests of America could not do. Total War provided a high level of production *and* full employment. Clearly then the close of the war will most probably bring shutdown and widespread unemployment. Consequently, the Peace is feared more than the war. We were totally unprepared for the war. Today, we are equally unprepared for the peace.

Will the downward oscillation at the close of war be 30 percent greater than 1929? On the basis of past experience and observation of the trends, this is the most probable. Our present controlling devices were incapable of stabilizing our social mechanism when the problems involved were only half the magnitude. How can they cope with this larger problem? This is the crisis with which America may be faced! It must be averted. Yes, the danger is real. The lights could go out!

It was the knowledge of these factors and trends that prompted Technocracy Inc. to design a new set of controls that were in accord with these physical realities. It is presented to the American people as Technocracy's Total Conscription Mobilization for Peace. The stability of our internal operations must be maintained. The unity of the population must be achieved, in order that the transition from war to peace be accomplished in a smooth and orderly manner.

The specifications of Technocracy's Mobilization for Peace are not the desires nor wishes of the Technocrats. The specifications are the result of the requirements arising out of the problem. The program proposes equality of sacrifice for *all*, based on the same standards of food, clothing, medical

attention, dependency allowances, etc., granted those serving in the armed forces. Total Mobilization of Men, Machines, Materiel and Money, with National Service for All and Profits to None is a part of the specifications dictated by the march of events.

Do you wish to keep the lights of America glowing? Then you must realize that this is not the responsibility of the Technocrats alone; it is the responsibility of every truly patriotic American.

His Master's Voice

The alternative is implied in this editorial report of the 'Hell Gate' incident (*New York Times*, week of the Hell Gate failure):

The incident carries with it a striking social lesson particularly in a week when technical societies are celebrating the 200th anniversary of J. Watt's birth. During most of the 19th Century energy was generated individually by thousands of engines that were the lineal descendants of the first mine pump that Watt designed with a separate condenser. Now energy is produced in central stations and shot hither and thither over vast regions. Moreover, energy can be pooled. The New York Edison draws upon the electrical resources of its own stations and those of the Niagara Hudson Company. It is the modern mass character of energy that is driven home by New York's mishap. A short circuit and the organic life of a great city is slackened for a few hours. Back we drift to the 18th Century, to burn candles and to realize what we owe to the physicist and the engineer who have made energy collective and who transform the city into a

blaze of light when the sun goes down.

How utterly dependent we are on the engineers! They and the scientists hold us in the hollow of their hand. How many of them are there? 100,000 . . . a million . . . who knows? They constitute a new ruling class. Destroy them and the country would be laid low. Disease would decimate us . . . transportation would be impossible . . . telephone and telegraph would be silent . . . starvation would stalk in the cities . . . factories would stand idle. **TECHNOCRACY?** The term is in bad odor. **BUT** there are technocrats for all that . . . **KNIGHTS NOT OF THE SWORD BUT OF ENERGY.** When the lights go out, we become aware of our leaders.

All In The Same Boat

Those who have analyzed the facts and physical trends indicating America's destiny naturally are concerned with the apathy manifested by the vast body of Americans. There are those who are convinced that due to their

strong financial condition, they can ride out the coming storm. There are those who even in periods of depression have been able to rise on the economic scale and who feel that they are clever enough to come out on top in any situation. There are those physically tough Americans who are certain that come what may they will survive and come up 'top dog.' Lastly, there are those too timid to take any stand on anything at any time.

Whichever group you may be part of, whether wealthy or poor, clever or dumb, timid or tough, you will have no edge. We'll all sink or swim together. It will require all the collective intelligence we can muster to prevent America from committing mass suicide. Only one organization on this Continent is designed to spread that intelligence, *Technocracy Inc.*

Not only would the adoption of its design of Total Conscription and Mobilization for Peace avert chaos but it would enable us to swing into that great one lane highway to the New America of Abundance, with security for all from birth to death and a Freedom of reality, never previously experienced by any peoples in any age.

Is There a Doctor in the House?

'The national physician-to-population ratio which is considered the minimum necessary to protect civilian health is probably about 1 to 1000,' says a fact sheet on rural health and sanitation, issued by the U. S. Department of Agriculture. 'Individual areas are considered critical if they have a ratio of one physician to 1,500. In April, 1942, there were 16 rural States that had less than one active private practitioner for 1,500 people in 1,005 rural counties which neither included a metropolitan center nor were adjacent to counties which had metropolitan centers.

The total population of these counties exceeded 22,000,000. The average number of persons per active practitioner in these 1,005 counties was 2,015. In the same month, an equitable distribution of the Nation's available physicians could have provided one for every 937 persons.' (U.S.D.A. Clip Sheet, June 24, 1945).

New definition: 'HEALTH—a condition which, if it becomes epidemic, would be fatal to doctors.'—From *Everybody's Digest*, Aug. 1945.

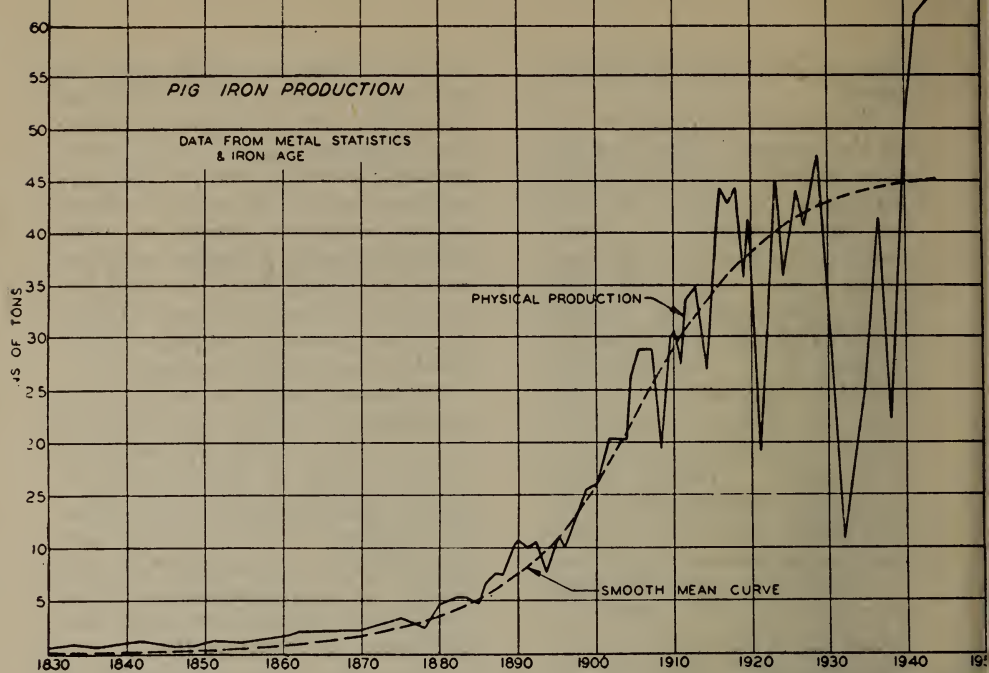


Figure 2: From Technocracy Study Course Book

The jagged curve of pig iron production. Observe oscillations. From peak to trough in 1893-1894 was a 27 percent shutdown, in 1908 it hit 38 percent, in 1921 it was 57 percent and in 1933 about 79 percent. Each oscillation was 30 percent greater than the preceding one. Note the break in 1938 which was halted by a resumption of government spending. This phenomenon shows up also in ton-miles of revenue freight hauled, in automobile and coal production, in other fields and in total use of energy.

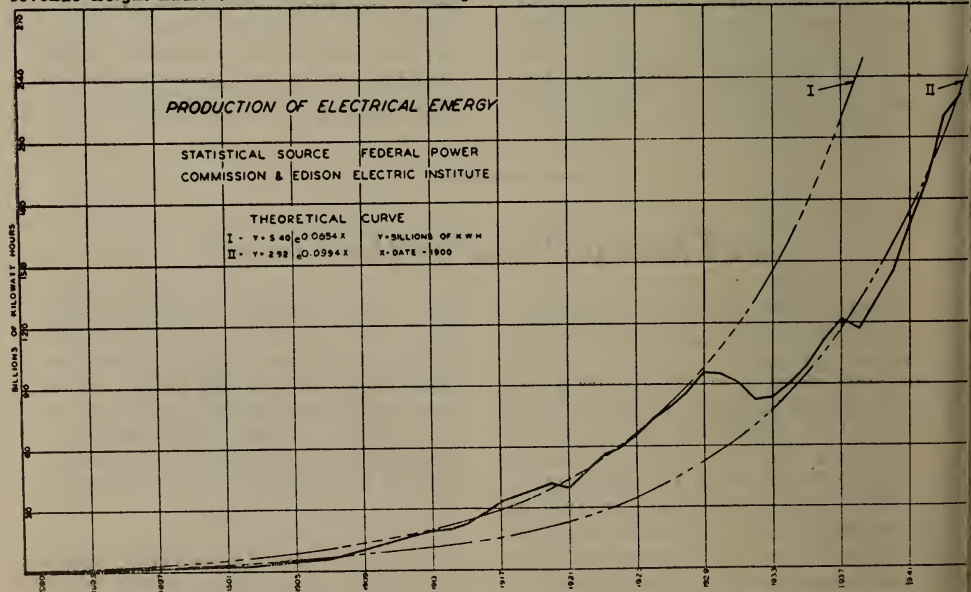
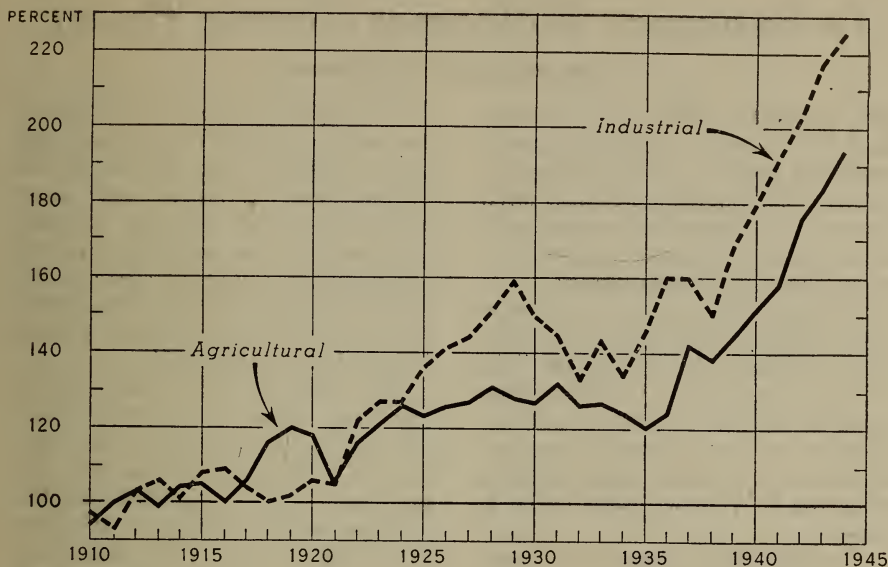


Figure 3: By Research Com. 8342-

Here is the same oscillatory characteristic of unbalance again. Note the dates in the downward drop in power production. Notice especially the break in 1937-1938. Volumes have been written to explain it away, but there it is. As shown, since 1890 there has been a tremendous increase of energy input into social mechanism. Just a few kilogram-calories more per capita and the ancient Price System will oscillate itself into collapse. We must prepare. There is a scientific design ready.

PRODUCTION PER EMPLOYEE: AGRICULTURAL AND INDUSTRIAL, UNITED STATES, 1910-44

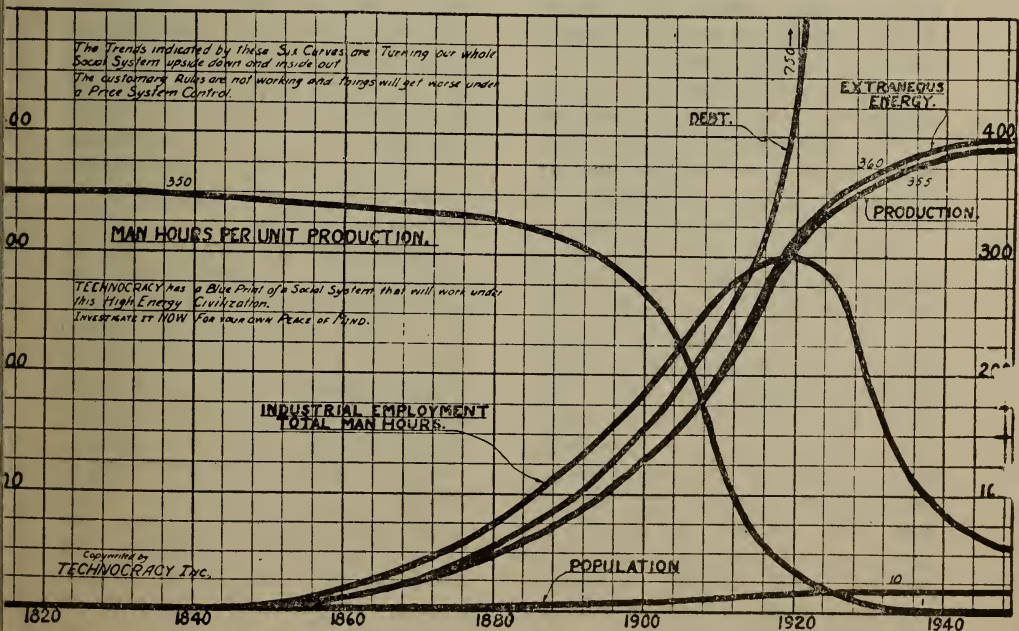
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U. S. DEPARTMENT OF AGRICULTURE

NEG. 45217 BUREAU OF AGRICULTURAL ECONOMICS

Here is the primary effect of energy and technology. Man-hours per unit are reduced, so production per employee rises. This spells more production with less man-hours and purchasing power. The oscillations of 1921, 1933 and 1938 show up here also. The only way to produce abundance is to employ more technology and energy and less toil. Under Price System controls this leads to catastrophe.



Technocracy's Basic Chart

Here is the physical history of North America from 1812 to 1948. It was drawn prior to World War No. 2, which has altered the trends since 1940 to some extent. For a complete explanation of this chart, consult the **TECHNOCRACY STUDY COURSE BOOK**. Man-hours per unit of production must decline. This is the handwriting on the wall for the Price System. Mercantilism is dying. Long live technology!

Technocracy Welcomes Atomic Power

By The Peripatetic Technocrat

ON July 16, 1945, in the desert of New Mexico the first atomic bomb was exploded. It dropped smack on top of 70 centuries of human social concepts. It blasted the mantle of validity from ideologies reaching back to the dawn of recorded history.

The death warrant of the old order of things was written high in the skies with a brilliance that shamed the light of the Sun itself. Overshadowing even the military importance of this event for an America then at war were its far more pregnant social implications for an America soon to be at peace.

The big thing about the atomic bomb is that a new source of energy has been uncovered. Technocracy welcomes this new addition to America's already abundant supply of extraneous energy. The event only confirms Technocracy's long standing thesis of the law of energy determinants.

Any increase in the application of extraneous energy, whether from fossil fuels, hydro-electric sources, or the fission of the atom becomes more unmanageable in direct proportion to its application under the Price System.

North America does not need an increase in thousands of percent in available power. Under the Price System we cannot manage properly the sources of energy available to us now. The more energy we convert into power the more difficult it is to maintain employment and purchasing power. With an increase of only a few percent in power over what we now have, the ideal of 60,000,000 jobs becomes a farce. Twenty million workers could produce everything everybody needs. The other 40,000,000 jobs become unnecessary to provide, and impossible to maintain.

The North American Price System has become progressively more invalid and unmanageable as technology has become more advanced and more extraneous energy has been applied. Now we face the possibility of new and abundant sources of cheap power in the not distant future. The resulting social effect under the Price System is bound to be catastrophic.

No political party, nor private enterprise, can control this new source of energy. It is not because they do not want to, or will not try. Indeed not! All sorts of hair-brained schemes will be proposed. It is because they do not have the right kind of good will, plus the exact knowledge to go along with it.

The right kind of good will would require that business and politics surrender their preferential advantages and social interference privileges in favor of the General Welfare. This, they are hardly likely to do. The exact knowledge required is in the sole possession of science and technology. It is part of a method of ratiocination, strange and foreign to the fields of business and politics.

Handicapped as they are, by the psychology of the cash register, our social leaders will find it impossible to do anything with this new problem except to muddle around with it. That is what they have been doing with all of our social problems 'since memory runneth not to the contrary.' They just simply do not know how to proceed.

We required but two years and \$2,000,000,000 to develop the atomic bomb. This was for the malignant, but necessary, purpose of destruction. There is a benign possibility to the use of atomic power

also. If we really mean what we say when we speak and write unctuously about peace on earth and good will to all men, we can bring the full social beneficence of atomic power into fruition in another two years. Do we want to?

With or without atomic power, North America can banish scarcity, insecurity, inequality of opportunity and all the other social banes of the Price System, and provide abundance and a real physical democracy for all citizens now. We have the resources, the installed machinery and the know-how. It is only a question of whether as a people we have the right kind of good will to tackle the job. The exact knowledge of how to go about it is here already.

If we do not take on this big job now, voluntarily, the motivation for doing it will soon be supplied by the pressure of physical events which are approaching inexorably closer. The doing of the job may then be accompanied by much suffering and sacrifice.

The dictum of technology is that we must scrap our 70 centuries-old concepts of buy low, sell high, and keep things scarce, of production and exchange for private profit. We must reorganize our entire social structure along engineering lines to produce and distribute for the General Welfare. If we fail to do this now, the ushering in of atomic power will only hasten the inevitable social disaster being brought about by Price System methods of operation.

Today America has the psychology of a defeated nation. We act as if we are afraid of something. There is no physical reason for our fears. We have just finished demonstrating our incalculable might for war. The military victory is ours. Let us now see to it that the peace does not defeat us.

The science and technology that made our war effort successful is still

with us. We have lost much in the lives of many of our best young men. We have also gained greatly in the ability to solve mankind's oldest social problem: 'What shall we do to live?' If we can do it for war, we can do it for peace.

There is nothing to be afraid of. The significance of the atomic bomb is that the great American social problem has been thrown into bold relief against the awful fires and smoke that rose into the stratosphere over Hiroshima and Nagasaki. It is easier today to see that problem in its true perspective.

Now we are face to face with the postwar period, stark naked of any collective social design of operations. We have had over three years to get ready for the time that is now at hand. We have done nothing about it. In addition, we remember the futility of Price System attempts to solve social problems in the past. Here is the true source of our instinctive fear of the future. But while we are jittery with apprehension, we have in our very hands the means to construct a more advanced and higher form of civilization in North America, right now.

In the light of these facts, we witness the sorry spectacle being staged by our leaders in business, politics and education. The only thing they can think of to do with America's new found power, atomic and otherwise, is to turn it over to some international commission or other, or to hope and pray that man will somehow be granted the occult wisdom to use it wisely.

The great American social problem doesn't call for occult wisdom. It is an engineering problem. Technocracy states that the only way to use our scientific knowledge wisely is to apply it socially for the General Welfare. The implications involved can neither be denied nor evaded. In the long run,

science and technology will have their way, willy-nilly; or chaos will ensue.

It is up to us who did not take up arms against the foe, and for those who did and survived the holocaust, to be true to our fellow Americans who fell in the battle. They lie buried today in the well-ordered cemeteries of the old countries of Europe, in the green hell of tropical jungles, on the windswept shores of lonely islands out in the vast Pacific, or deep in the dark depths of the restless sea. Many of them will never come home again, dead or alive. It was not for them to hear the glad ringing of the peace bells, nor to join in the happy celebrations. They died to make it all possible. They died for an America that can be, not for an America that was. To

put it another way, they did not give their young lives for the old America of scarcity, insecurity and depressions. They fought for the land of the pioneers' dreams, the promised land of abundance. It is up to us to create that America, else their great sacrifice will have been in vain.

Technocracy calls upon all North Americans to re-examine the framework of the Price System social structure in the light of the new atomic power. There, plainly written, for all to read, is the handwriting on the wall. The choice is now between science or chaos. There are no other alternatives left. Think well, Mr. and Mrs. American. What are YOU doing about it?

INVESTIGATE TECHNOCRACY!

The Ghost of Juniper Ridge

'There you are. The experts are happy; they have always said "no tin" and regardless of hundreds of tin assays proving them liars; regardless of years of fighting, especially around Juniper Ridge in Oregon, the experts have taken the bit between their teeth and refuse to see any tin ore in these United States.

'They are no doubt very happy to have the backing of the elite "E & M J" to prove that there is no tin ore in the United States.

'I hereby contend that the editor is either an old fossil, or in the pay of a vicious "good neighbor" tin cartelized group of thugs who want to control all tin production and prices, and also kill any attempt to prospect or mine tin ores in these United States. But nevertheless *there is good tin ore in the United States . . .*' (From column 'Getting Down to Bedrock With the Old Rockhound,' on editorial page of *The Mining Record*, Denver, Colo., Nov. 30, 1944). Ed. Note: See *The Technocrat* for August, 1941, 'The Great Tin Conspiracy.'

'We could have a national money income of \$300 billion a year and still be starving to death for lack of food. In 1923, just before the mark broke, the German national income was in the trillions, but the people were destitute, for their money would not buy anything.

'It is the same way with jobs. Full production and full employment . . . are not synonymous. The old WPA provided a great many jobs, but very little production. . . . it is entirely possible for us to have 55 or 60 million persons employed and yet have a declining standard of living.'—Sen. Kenneth S. Wherry (Nebr.) Jan. 18, 1945 (as quoted in *Vital Speeches of the Day*, Feb. 15, 1945).

Although originally designed to produce 80,000 tons annual capacity, the Institute, W. Va., butadiene plant is now delivering butadiene at the rate of more than 100,000 tons a year. Eight-tenths of a short ton of butadiene is required to produce one long ton of Buna-S synthetic rubber.



From John Atherton's Painting In The Universal Match Collection

Paleolithic man discovers fire. How? Where? When? Who Knows? The occurrence is lost in the mists of antiquity. The fact remains. The discovery and control of fire marked man's first success in the diversion of extraneous energy to his own uses. It set him apart from the lower animals. Paleolithic man was caught up in the resistless processes of change. He advanced one step. It's a long way back to the old Stone Age. But that is where the slow torturous march of technology began.



Photo: Courtesy Ford Motor Company

From a savage squatting beside a fiery stream of lava, to this 500-ton fast traverse is a far cry. The different is advanced technology. This press riveted fin bulkheads for B-24 Liberators. It completed two spars and drove 270 rivets in one operation requiring 5 minutes. Previous methods took 50 minutes. Press riveting eliminates warpage and greatly improves sheer strength. The latest war is over but the latest advances in technology remain. They represent a net gain from the war.



Official Photo

Building B-29 bases in China. From here it is not such a far cry back to the Stone Age. The shorter distance is testimony to the voluminous philosophy and scanty technology of the Orient. The four-coolie distance of muscles here does not even equal $\frac{1}{2}$ hp. of mechanical energy. Philosophy and morality are not the basis of civilization. They are but evanescent opinions. Civilization is rooted in physical factors. It is nowhere so modern as where the most technology and extraneous energy are used.

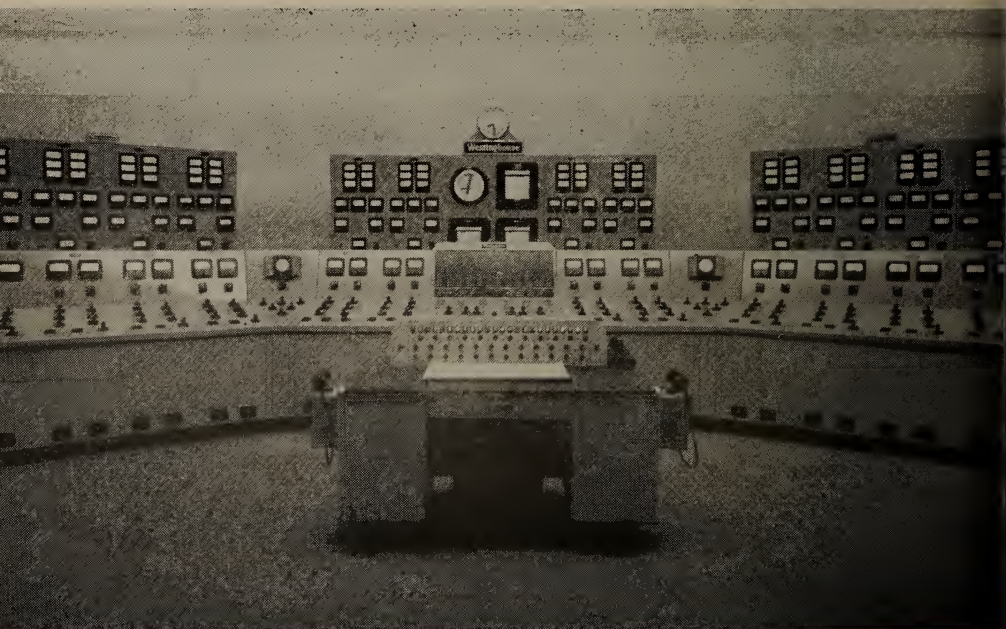


Photo: Courtesy Aluminum Company of Canada Ltd.

This is what we mean. Here is the switchboard in the control room at Shipshaw Plant No. 2, on the Saguenay River. With eight 100,000 hp. and four 85,000 hp. units, it is the world's largest single concentration of hydro-power. Control is simplified and coordinated into a one-man job. No coolie muscles, no toil, no philosophy. This is the application of physical laws to reduce man-hours of labor. That is the yardstick of 'progress.' How the Price System perverts it is another story.



Photo: Courtesy Federal Power Commission

Winds have always blown over the earth. It was not until the 12th century that the first crude windmills appeared. This proposed dual electric generator perched atop a 500-foot steel tower is designed to produce 6,500 kw. in a 28 mph. wind. Current output is automatically regulated to the wind velocity. There is a 1,000 kw. unit in operation on Grandpa's Knob near Rutledge, Vermont. Wind energy is free. Construction of units is simple, operation automatic and maintenance cheap.

PHYSICAL OPERATIONS IN AMERICA

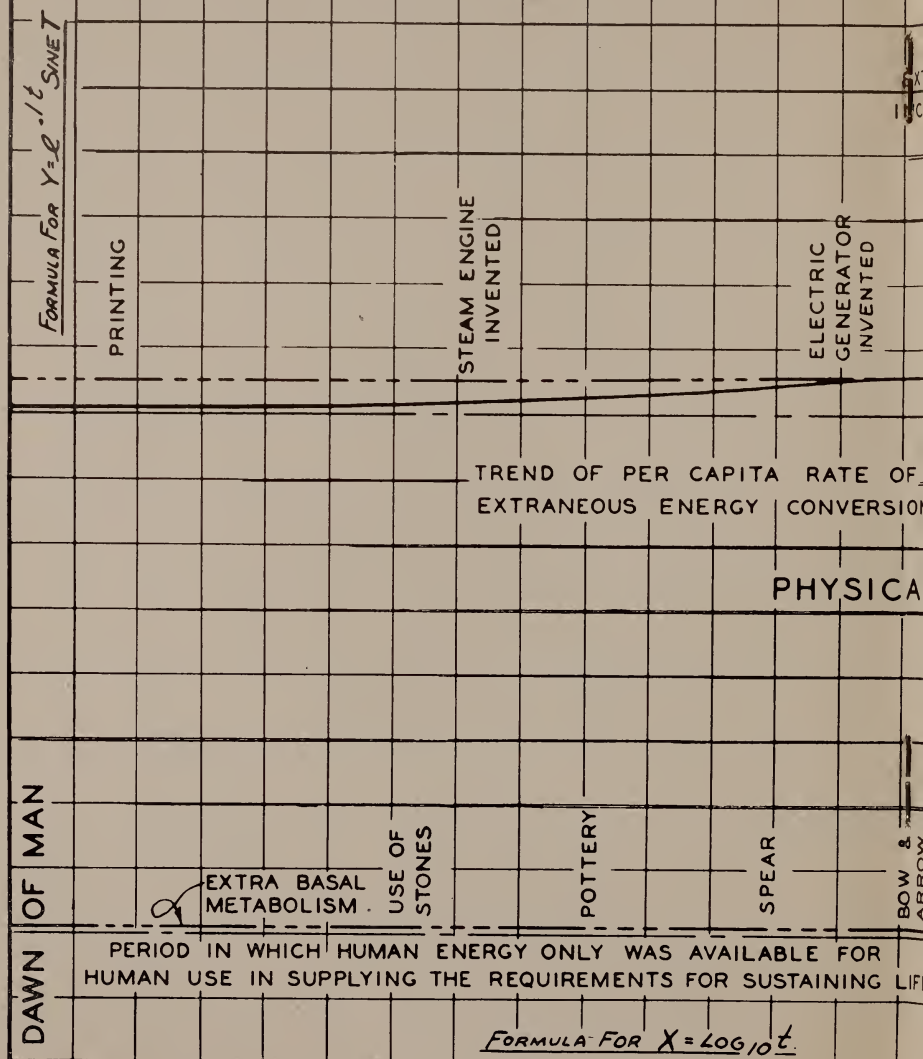
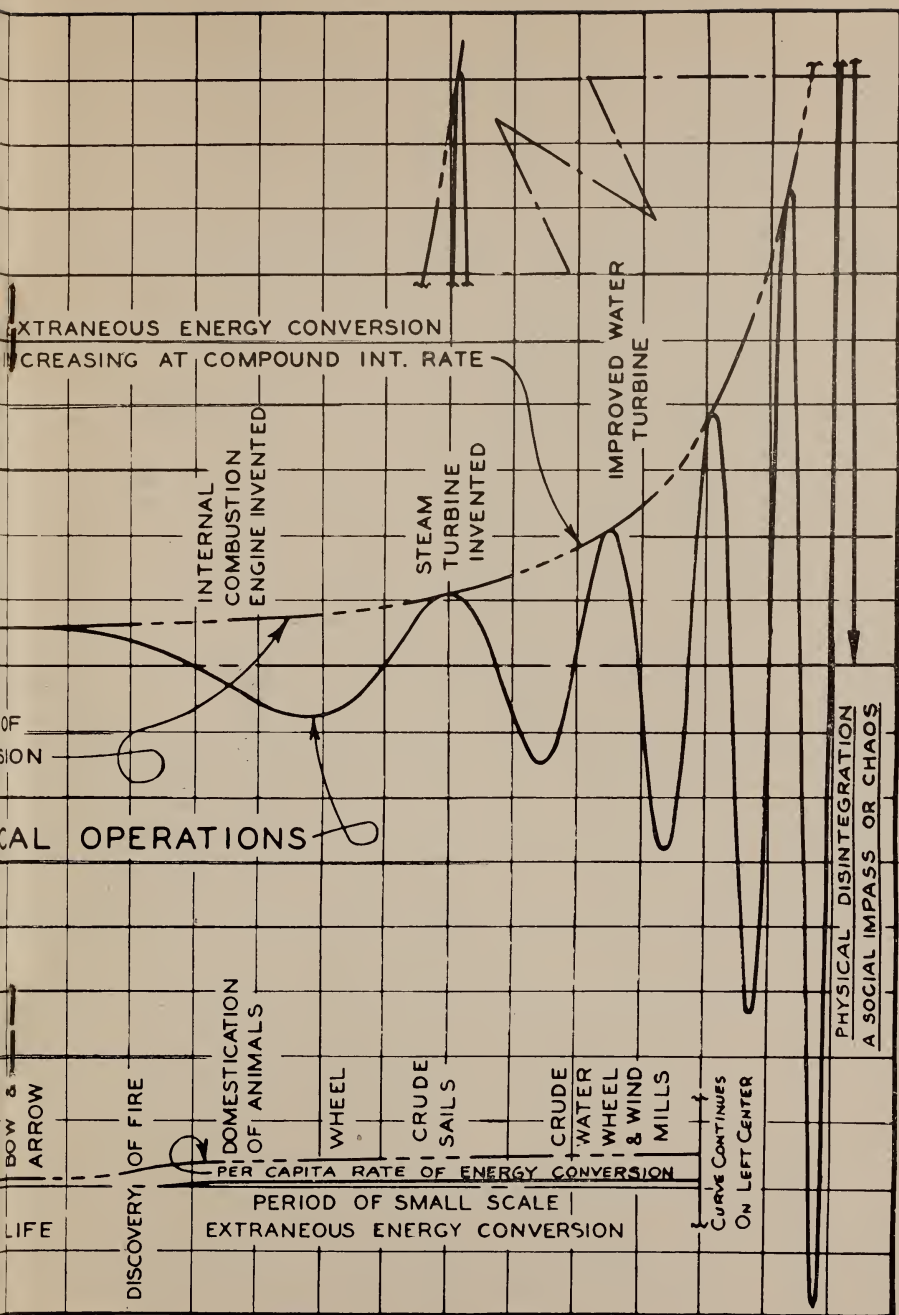


Figure 1: By Research Com. 3342-1

This chart is divided into two parts. The lower part shows the non-oscillatory period of human society prior to the use of extraneous energy on a large scale. The lower part shows what has happened since then. The peaks show high points of production. The troughs represent shutdowns. Oscillations of this type are due to unbalance between production and distribution. A mercantile Price System is unable to distribute purchasing power so that the products of industry can be bought back on a balanced load basis. With advancing technology productive ability outruns purchasing power.



With time, more technology and increased input of energy the unbalance becomes too great, a break occurs and production shuts down. An upward swing is started again by redistributing purchasing power. Soon the phenomenon re-occurs. The forces acting here are cumulative and self-regenerative, resulting in increased amplitude and frequency of oscillations. If continued, this process can end only in a complete shutdown. A scientific system of functional, non-price, social controls is required to operate a high energy social system on a balanced load basis between production and distribution.



Photo: Courtesy Automotive Council for War Production

'Bowed by the weight of centuries he leans.—The emptiness of ages in his face.' For thousands of years the productive ability of man was geared down to the power output of the human body. His cultural and social institutions also become geared to the age-old concepts of toil and scarcity. Today our productive ability is astronomical. Our social controls are still geared to those ancient concepts. Verily, they are full of the emptiness of the ages, ripe fruit of the Price System.



In 1861 war supplies were hauled by this large horse-drawn truck. The Price System was just entering a great period of expansion borne on the growing wings of penitentiary. It was not compulsory to solve social problems then. We could always conceal them in penitentiaries, insane asylums, potter's fields and legislative pigeonholes. Today we are still at the same old game. It won't work any longer. Social problems must be solved now. Technology is the Nemesis of all the time-tried rackets.



Photo: Courtesy Pennsylvania Central Airlines Corporation

In 1945 many war supplies are sent by air. An electrically driven endless belt loads express, mail and luggage with a minimum of man-hours. By contrast with the preceding picture this one is a scene from a different world. And, so it is! North America has entered a new age. Upon our recognition of this fact rests our collective security. We are at the end of manipulation and obscurantism. The issue is clear cut. Technology will out, or else we go back a thousand years to a new dark age.



Photo: Courtesy Joshua Hendy Iron Works

The electric switch, symbol of the Power Age. Flick it on and the lights go up; the wheels turn. Snap it off and flow lines stand still; the lights go out. The switch knows not of philosophy, politics or business. It does not hear our prayers nor heed our yearnings. It just operates. That is physical law. Paradoxically, power will do everything we have always wanted done if we operate our social system by its design. In that fact is America's only salvation from the emptiness of the ages.



Photo: Courtesy Power Magazine

The Four Horsemen of the Apocalypse: War, Famine, Pestilence and Death. They have ridden over the earth time after time. Here, Philip Wylie's Fifth Horseman, full of pity, rides ahead to warn man of their coming. He failed, for pity is not enough. As long as the Price System exists, the Four Horsemen will ride again and again under its scourging banner. Science dictates a total break with the dead past, a new design of social operations. We had better listen. **INVESTIGATE TECHNOCRACY!**

The March of Power

By Research Committee 8741-1

One asks what was the total power consumption of the U.S.A. in the year 1937, eight years ago? It was of the order of 25,957 trillion B.T.U. of heat energy, according to the U. S. Bureau of Mines. What are the Bureau's figures for 1944, the all-time high year of America's war production? . . . 35,707 trillion B.T.U.

To translate British Thermal Units into the language of the layman, this amounted to approximately 14.4 trillion horsepower-hours, *1-2/3 billion hp. at work on the average every hour of the day and night*, most of it burned in the engines that drive our trains, factories, autos, ships, tractors, planes, mines and power stations. As the Price System's controls falter in

the ensuing months, the horsepower hours will probably decline rapidly.

In the largest industrial (installed factory hp.) city of the world, the Chicago metropolitan area, this energy conversion from coal, oil, gas and waterpower amounted to about 100,-000 hp.-hours per inhabitant for the year. (1944 estimate, based on 1943 figures given by Robert Brinton Harper, engineering vice-president of the Peoples Gas, Light & Coke Co., Chicago, at Midwest Power Conference April 13, 1944.) When it is realized that at best an adult human can convert food (fuel) into work at the rate of less than 1/10 hp. per day, then these figures indicate how closely tied Americans are to the March of Power.

Annual Supply of Energy from Mineral Fuels and Water Power in the United States—1944

Bituminous Coal	16,244,000,000,000,000	B.T.U.
Petroleum	10,067,000,000,000,000	"
Water Power*	3,989,000,000,000,000	"
Natural Gas	3,654,000,000,000,000	"
Anthracite Coal	1,753,000,000,000,000	"

Grand Total 35,707,000,000,000,000 "

* (At constant fuel equivalent of 4.02 lbs. coal per kw-hr.

	1943:	33,817,000,000,000,000	"
	1942:	31,995,000,000,000,000	"
	1941:	29,549,000,000,000,000	"
	1940:	27,327,000,000,000,000	"
	1939:	24,620,000,000,000,000	"
	1938:	22,765,000,000,000,000	"
	1937:	25,957,000,000,000,000	"
	1936:	24,367,000,000,000,000	"
	1935:	21,615,000,000,000,000	"
	1934:	20,413,000,000,000,000	"

—Source: U. S. Bureau of Mines.

Annual Supply of Energy from Mineral Fuels and Water Power Produced in Canada . . . 1944

Water Power	2,025,000,000,000,000	B.T.U.
All Coal	462,186,000,000,000	"
Petroleum	60,000,000,000,000	"
Natural Gas	49,450,000,000,000	"
Grand Total	2,596,636,000,000,000	"

Measured on a per-capita per-day basis, the extraneous energy consumption in the U.S.A. in 1944 was approximately 180,000 kilogram-calories. As Canada's total power consumption last year, based on fuel and waterpower figures given in *Canada-1945*, was close to 2,600 trillion B.T.U., the per-capita per-day energy amounted to about 148,000 kg. calories. Both countries' conversion of energy reached new historical high marks, and would have been higher if not for greater efficiency in the use of fuels and hydro-electric power in recent years.

'Power is the steam roller of technology. Technology is the social mechanics of the Power Age. The wish-fulfillment of the masses, the sincerity of the reformer, the enterprise of the politician, the vision of our intellectuals, the pathology of our economists, are but gestures of futility,

straws in the wind, in the face of the march of power.

The soldier and the seer, the politician and the priest, the business man and the banker have ruled human society in every age until now. Technology in its march of power is serving notice on all of these, chiseler and sucker alike, that their day is passing, that a new order is clamoring at the gates. As technology moves up more power the gates will go down, and a new leadership of men and things will be given to the world. This leadership will spring from those of the trained personnel of this Continent who have the courage, capacity and discipline to administer and direct the technological application of physical science to the conduct of human affairs.'

(Howard Scott, Director-in-Chief of Technocracy Inc in *Technocracy* magazine, Series A, Number 9, February, 1937)

Science or Business

Scientists form the only group in society which knows that the concepts and ideas by which politicians and the accepted organizers of human relations are guided are mostly wrong, based on misconcepts, old superstitions, and false institutions. Yet the scientists have left not only the administration of, but also most of the study of the administration of human life and world affairs in the hands of people who know little, and who have been trained so poorly that they care still less, about what a century of progress in the science of life has achieved. Therefore, I cannot help feeling that we scientists are more truly responsible for the chaos of to-

day than any other part of society.

Franz Verdoorn, scientist and teacher, in *Science Illustrated*, January 1945.

'This war is being fought for freedom from political oppression, not for Freedom from work. . . . The only time the laws of economics can be suspended is during a war. . . . It's easy now for anyone to get and hold a job whether or not he does it efficiently and earns his pay. That time is almost over.'—Excerpt from a full page ad of Warner & Swasey, machine tool manufacturers, in *Newsweek*, May 8, 1944.

It takes ten pounds of milk to make one pound of American Cheddar Cheese. Moral, eat your milk, and let the other guy drink his.

Primer of Technocracy

By Education Division 8741-1

The Uniform Crime Report for 1944, issued by the F.B.I., lists a total of 1,393,655 major crimes in the United States in 1944. There were 76,091 crimes against the person, listed as murder, negligent manslaughter, rape, aggravated assault, etc. Crimes against property totalled 1,317,564, consisting of larceny, burglary, auto thefts, robbery, etc. From this it will be seen that offenses against property constituted more than 95 per cent of all the crimes reported in 1944.

What's Yours Is Mine

ACCORDING to this annual report, which is the best available authority under the Price System, only about 5 percent of all crimes are crimes of the emotions or passions. The other 95 percent were committed for the purpose of getting some one else's property. Obviously, the persons committing these crimes, except in the case of kleptomaniacs, must have felt a need to acquire more purchasing power. This is a point to be kept in mind.

As a whole, crimes against property show a decrease in the last three years, 1942, 1943 and 1944, as compared to the pre-war average of 1939 to 1941, except in the case of auto thefts. Robberies declined 13.2 percent; burglaries 8.9 percent; larcenies 13.3 percent. But, auto thefts increased 15.2 percent. It is an axiom that crimes against property decrease in good times and increase in hard times. However, you may say, times have been good the last three years. So, why should auto thefts increase? The answer is scarcity. This is a second point to be kept in mind.

The total registration of automobiles has decreased by 2,365,756 in the last three years. Autos have been getting scarcer. Ergo., we have more auto thefts. Conversely, jobs have been more plentiful these last three years, resulting in more purchasing

power on the whole than in the prewar years. Ergo, crimes against property diminish. But, even with this augmented purchasing power the average man couldn't buy a new car in the last three years. So, according to the record, 97,081 of them just went out and helped themselves.

Crimes against property are a phenomenon within the framework of the Price System. The fact that they rise in hard times and fall in good times gives a clue to their motivating cause. In hard times, total mass purchasing power is lower than the usual low of so-called good times. Consequently, purchasing power as a whole becomes scarcer. This leads to crimes intended to alleviate that scarcity. In so-called good times, jobs become more numerous. Consequently, total mass purchasing power creeps a little bit upward out of its customary cellar. The need of alleviating a scarcity of purchasing power declines. As a result, crimes against property drop off.

The two main factors in the background of crime against property are scarcity and purchasing power. The relation between these two factors is the greatest single cause of this type of crime. Since any Price System must maintain a scarcity in order to remain a Price System, there is little prospect for this type of crime to decrease to any extent. Also, since no Price System can ever create a suffi-

ciency of purchasing power for all citizens, there is little prospect of help from that source. All the preaching and moralizing we can muster can do no more than make a dent in the crime total.

What's Mine Is My Own

An integral part of the Price System environment is the concept of property. In 1944 there were 1,317,564 people in our right rebellion against that concept. They have no respect for it whatsoever. The best definition of property we know of is the one given by Lawrence T. Frank of the Rockefeller Institute. It is to the effect that property consists not in a physical object, but in a mode of behavior with respect to a physical object. Another way of saying this is that property consists in what society will allow an individual to do with what he owns.

In the North American Price System, a small minority own the means whereby the great majority must live. What society allows this small minority to do with the means of production and distribution is the determinant of the General Welfare of all the people. The Price System's code of property rights with its necessary concomitants of scarcity and low total mass purchasing power is the direct cause of crimes against property. If you want to get rid of this type of crime, you must remove the cause.

Technocracy's basic postulate is that nearly all phenomena involved in the operation of any social system can be measured. We can measure crime with the yardsticks of property rights, purchasing power and scarcity. But all we can do about it under the tyrannical restrictions of the Price System is to treat the symptoms. So long as scarcity, low purchasing power and private ownership and control of the General Welfare exists, a standing re-

ward is offered to all who can steal successfully. 'Withdraw the reward and these activities automatically disappear. It is the Price System itself and not the individual human being which is (primarily) at fault.'

The only way to solve at least 95 percent of our crime problem now becomes plain. It consists in reorganizing the entire social structure along technological lines. We must remove the price tag from the General Welfare. We must abolish scarcity and low total mass purchasing power. We must alter our collective social concept of property so that it becomes the servant of all and the master of none. This implies a thorough overhauling of our entire social structure and a realignment of it along technological lines. After all, why not?

We scrapped the windjammer for the steamboat; the pony express for the telegraph; the stagecoach for the railroad; the carriage for the auto; the horse for the tractor; individual fabrication for mass production; human toil for extraneous energy, and so on. Who is there so ignorant and stupid as to say that North America will not scrap special privileges for the few in favor of the General Welfare of all citizens!

It is not only the solution of our crime problem that is involved. By itself crime is only a minor part of the social problem as a whole.

If you define crime as being an offense against the welfare of society, then the greatest criminal of all is the Price System itself. When we solve the North American social problem as a whole, the crime problem will evaporate in the same way that the night dew evaporates in the morning sun. Let's quit philosophizing about crime and get down to the bedrock of social facts. 'All phenomena involved in the operation of a social mechanism are metrical.'

Technocracy and Your Trade

Power - Production - Employment

By R. F. Novalis

It's An Invisible Army

EVEN though we produced more than ever before in the wartime peak year of 1944, didn't we also employ more people than in any previous year? This is the comment commonly heard when the subject of technology is mentioned. The two answers to that fallacy explain why it has been possible for this Continent to raise its living standards above that of the rest of the world and at the same time win a World War, for the second time.

More Americans than ever before in our history were employed in 1944, but 10 million of them were turning out munitions. The important thing is that each operative produced more than he or his father or grandfather could turn out in the past per man-hour.

Greater use was made of existing machines, more machines were built and installed and more power-producing capacity was placed in operation than in any five-year period in our entire history.

In the four branches of industry, factories, farms, mines and railroads, which produce the bulk of our output, how has greater use of power enabled Americans to deliver more per man over the years? It is an obvious fact that our muscular strength certainly has not increased at all in the past half-century, nor in the seven centuries preceding that.

FACTORIES

Back in 1880 production of commodities per wage-earner was five tons per man-year. In 1930 this had increased to 22 tons per wage earner. (*Chicago Herald-American*, August

11, 1945.) Since we employed only 16 percent more people in 1940 than we did in 1930 to produce 38 percent more goods, productivity per man in 1940 was something over 25 tons, of ships, automobiles, refrigerators, hats, steel and the other things that America uses in peacetime. (Federal Reserve Board and Bureau of Labor Statistics)

James Watt's steam engine, patented in 1769, was first used outside of a mine in 1785 when a spinning machine was powered in an English factory. One of the direct causes for the American Revolutionary War was the attempt on the part of certain industrialists to keep the steam engine, or even drawings of it, on the other side of the Atlantic away from America.

By 1890 we had about 6,000,000 horsepower of prime movers (mostly steam engines) in our factories and 4,250,000 wage earners. The last census of manufactures in 1940, fifty years later, gave us only 1-2/3 more operatives but 8½ times as much installed horsepower; 7,880,000 employees and 51,000,000 horsepower.

Random comparisons can also be made of the difference in productivity as the inevitable result of using power driven machines to do work in place of human toil. Average working hours in Massachusetts' textile plants back in 1840 were 14 *per day*. In 1860 at the outset of the Civil War, national average factory hours were 66 weekly. This went down to 60 in 1887, to 57 in 1907 and to 38 in 1940. In 1863 it required 18-1/3 man-hours to manufacture a pair of men's shoes. By 1895 this had been cut to 2½ man-hours through the introduction of automatic machines.

The same trend has occurred in

'new, technological' industries. In 1920 we produced a third of a billion of electric light bulbs with 17,000 wage earners. In 1939 General Electric alone made 970,000,000,000 bulbs, but not with the 51,000 people that would have had such jobs if technology had not been introduced. Less than 5,000 people were needed to produce 970,000,000,000 bulbs. The other 46,000 persons joined the ranks of the approximately 8,800,000 unemployed in 1939. (National Conference Board data.)

A glass factory workman in 1838, just a little over a century ago, worked 12 to 14 hours a day in order to blow 216 four-ounce bottles. (*Scientific American*, September 1945). The 1945 glass plant operative doesn't blow out his lungs, he simply presses a button, and machines, devised by technologists, turn out 216 bottles that size in *three minutes*.

FARMS

Tractors produce no crops. They are the prime movers which pull plows, combines, harvesters and other *machines* which today do the work of growing food and fiber. Between the time the Pilgrims landed in 1620 and the turn of this century, oxen and horses pulled what crude implements the pioneer farmers had.

In 1914 we had 10,000 tractors on our farms. By 1930 only 13½ percent of the farms were supplied with tractors. The 1940 census showed 23 percent of the farms with tractors. Today we have over 2,000,000 tractors and fewer people employed on the farms than in 1914.

In 1830 it took 64½ man-hours to produce an acre of wheat; today it takes 2½ man-hours. (International Harvester Co. data.)

In 1880 one-half of all the wage earners in the United States were still employed on farms. In 1940 only

22 percent of all wage earners remained on farms..

In 1942 farm crops of the nation were harvested with 26,000,000 fewer persons than would have been required if 1840 methods were still in use. (*Automotive War Production Bulletin*, February 1944). When it is recalled that total 1942 farm employment was only 10,000,000 persons, the comparison is not so startling in view of the increase in tractor use.

RAILROADS

In 1855, before the first transcontinental railroad, you would have spent 28 days crossing the United States in a coach. Today it is done by rail in less than 56 hours. The all time high of people 'working on the railroad' was reached in 1920 with 2,220,000 employed. This fell to 1,660,000 in the boom year of 1929, when nearly 10 percent more freight was carried than nine years before. This last statement signifies the change in productivity due to more efficient locomotive boilers, more automatic coal-loading and track laying machines and scores of other technological changes.

In 1944 rail freight load reached an all-time peak of 740,000,000,000 ton-miles, or 60 percent more than 1929's load, and the 1,044,000 employees was still far under the 1929 level.

MINING

Fifty-five years ago our 21,800 mines and quarries employed 542,500 miners, who worked with tools powered by 1,300,000 horsepower of prime movers, or less than 2½ horsepower per man. By 1940 the number of mines had decreased one-half to 10,800, the miners increased less than one and one-half times to 705,800, but installed horsepower jumped nearly ten times to 12,100,000 horsepower. The inevitable result is as follows:

Mine Output Per Man-Year, U.S.A.

	1870	1929	1941
Coal, bituminous and anthracite	300	900	1,000 tons
Copper	5,000	45,000	88,000 pounds
Iron Ore	300	2,500	3,300 long tons

(Sources: 'Technological Trends and National Policy'
and U. S. Bureau of Mines)

There's Only One Way

All in all, back in 1890 before the advent of the gasoline engine, the United States had less than 50,000,000 mechanical horsepower installed to drive its mines, factories, farms, ships, trains, vehicles and power plants. (*American Economic Review*, September 1933.) Today, with total employment approximately twice what it was a half-century ago, we have close to 2,000,000,000 horsepower, not including another billion horsepower built for the Army and Navy's use on the fighting fronts. (*Popular Mechanics*, April 1945.)

The future of this Continent lies in a continuation of this process; more goods with more power and less man-hours of labor. Under the Price System the use of more power with less

man-hours of labor means more unemployment, more debt and taxes, more crime, more malnutrition, and more sudden death on the home front. In a Technocracy, or a Technate, the same trend would result in security and abundance. There are no other alternatives.

The Power Age has arrived in North America, and within the next decade the Power Age will dominate this Continent from the Panama to the North Pole. Power is the steamroller of technology. Technology is a jealous god. Technology will tolerate no false gods.

HOWARD SCOTT, Director-in-Chief,
Technocracy Inc. in *Technocracy*
Magazine A-9, February 1937.

You'd Think They'd Know Better

'We are greatly pleased with our new Winton. There may be improvements yet to come in such autos, but it is difficult to see much room for them.'—Andrew Carnegie, in 1905, as quoted in the *University of Knowledge* by Glenn Frank.

'The car I now bring out is considered by me as pretty close to finality—so close that I call it "my farewell car." I shall let it stand as my topmost achievement.'—R. E. Olds, pioneer designer and manufacturer of automobiles in an advertisement in the *Scientific American*, Jan. 6, 1912.

'I want to be on the safe side. Nearly all the inventions that are possible have been invented. Soon there will be no more, and this office will have to close. I want to get into something else now while I have the opportunity.'—A Clerk in the Patent Office before the turn of the century, as quoted in the *University of Knowledge*, by Glenn Frank.

'Man is a Tool-using animal—nowhere do you find him without Tools; without Tools he is nothing, with Tools he is all.'—Thomas Carlyle in *Sartor Resartus*.

Technology Marches On

The Pace Is Accelerating

By Research Division 8741-1

PRINTING

Printers on the *Jersey Journal*, Jersey City, N. J. went on strike June 12, 1945. They stayed out all during June, July and the first week of August. The newspaper got out a weekly 'photo-engravers' edition without employing any printers.

On August 10, 1945, Rudolph E. Lent, business manager of the paper, made the following announcement in the weekly 'photo-engravers' edition:

The *Jersey Journal* is investigating a new method of producing its publication. It is expected that by next week it will be possible to produce the first publication utilizing this method. A product with news and features closely resembling the normal issue will result, followed shortly thereafter by inclusion of regular classified and display advertising.

On August 16, 1945 the 40 printers on the *Jersey Journal* voted to go back to work. Printers on the *Bayonne Times*, Bayonne, N. J., who were also out on strike, also voted to go back.

The *Birmingham Post*, the *Birmingham News* and the *Age-Herald*, all of Birmingham, Alabama, were closed down for five weeks between July 11 and August 15, by a strike of union printers.

On August 15th the *Birmingham Post* published a four-page photo engraved edition. The *News* and *Age-Herald* were planning a similar combined edition. On August 16 the printers of all three papers voted to go back to work.

In 1940, the T.N.E.C. Monograph

No. 22 had the following to say in regard to the advance of technology in the printing industry:

The ultimate development would be the development of a photographic method of printing. This development awaits only the invention of an adequate method of preparing the negative and an inexpensive sensitizer. If the photo-engraving process were to replace printing as the facsimile machine threatens to replace the teletype system, labor in the printing trades would be almost completely eliminated.

For a more complete analysis of technology in the printing trades, see *The Printing Industry Worker* in the *Great Lakes Technocrat*, May-June 1945, issue No. 73, page 43.

AGRICULTURE

A new cranberry harvesting machine is based on the vacuum cleaner principle. The device draws the cranberries through two hoses. A separator draws off leaves and twigs which are dropped into a bag. The berries are passed through a hopper, which grades them for size. The harvester is operated by 3 men and is said to do the work of 30 hand pickers. (*Business Week*, January 6, 1945).

Ed. Note: See Changing Agriculture in *The Technocrat*, January 1940, page 15.

Forrest Woods of McLean County, Illinois, was high man in the 1944 Illinois Ten-Acre Corn Growing Contest, with a yield of 182.05 bushels per acre of No. 2 corn. (*Fortune*, April 1945). *Ed. Note:* See Technology Study Course, page 258.

AVIATION

The Central Aircraft Corporation of New York has developed a flying wing. It is more commonly known as the Burnelli Flying Wing. Vincent Burnelli is president of the company. On August 16, 1945, Clyde Pangborn, famous pilot, who made the first non-stop flight across the North Pacific, put this flying wing through its paces. The test took place near Montreal. The craft weighs 27,000 pounds and the fuselage, being designed as part of the wing, provides 60 percent of the craft's lifting power. It took off after a run of only 650 feet. With a full load of four tons, it can take off in less than 800 feet. The wing can also land within 800 feet, or less. The center portion of the wing, or fuselage, is 20 feet wide, 30 feet long and 7 feet high and accommodates 22 passengers comfortably. Overall wing span is 86 feet and it is powered by two 1250 h.p. engines. Top speed is 215 miles per hour and cruising range 1500 to 2000 miles. The tail is a twin boom assembly. Although not an extra large plane, the wing's ability to take off and land from short runways gives it a tremendous advantage over conventional planes. (Data from *Chicago Tribune*, August 16, 1945.) *Ed. Note:* See *Technocracy Magazine* A-21, published November 1941, page 21.

PAPER PRODUCTION

The paper and pulp industry is producing more paper than in 1942 with 10 percent fewer employees in mills, the American Paper and Pulp Association announced today. Production per employe increased from 98 tons in 1939 to 117 tons in 1944, the association said.

Chicago Sun, March 11, 1945.
Ed. Note: See *Technocracy Study Course*, page 118.

SCRAP ALUMINUM

The problem of recovering aluminum from complex scrap materials, without being forced to sort out the non-aluminum parts, has been solved. The process also separates the aluminum from admixed alloying substances. The resulting product is the same as aluminum manufactured from bauxite. The process uses a caustic soda which dissolves the aluminum but not the non-aluminum parts and alloyed substances. By filtering, the solid impurities are then removed and the residual liquor manufactured, by the Bayer Process, into pure aluminum oxide. 'It was stated that the new process makes possible the conservation of the country's high grade bauxite reserves, and of more importance, the man-hours required to mine bauxite.' (*Wall Street Journal*, May 8, 1945, italics ours.) *Ed. Note:* See *Technocracy Study Course*, chapter 13.

AIR FRAME MANUFACTURING

The peak of total employment and total man-hours of labor in the airframe industry were both reached in November 1943. The peak of production was not reached until March 1944. Thereafter, until May 1945, production declined gradually but in the latter month it was still higher than in November 1943. Total employment and total man-hours declined much more rapidly between March 1944 and May 1945 than production did. Output per man-hour, however, continued to rise rapidly.

The Airframe Industry assembles complete planes and manufactures component parts for the airframe portion of planes, excluding the production of gliders, motors, propellers, etc.

Taking January 1942 to equal 100, the Bureau of Labor Statistics' Productivity and Technological De-

velopment Division index reads as follows:

	Production	Total Employment	Total Man-Hours	Output per Man-Hour
January 1942.....	100	100	100	100
November 1943.....	663.4	305.1	290.7	228.2
March 1944.....	842.3	285.2	273.0	308.5
May 1945.....	667.0	202.5	193.8	344.2

Continued on page 12

Output of airframe per man-hour tripled during the three years following the attack on Pearl Harbor. Immediately after the war, a sharp decline in aircraft production is expected. A decline in productivity is also probable, since the industry will lose some of the advantages of standardized pro-

duction in huge volume when output is reduced. On the other hand, productivity should remain well above prewar levels, because of the substantial technical advances in manufacturing methods achieved during the war. (*Monthly Labor Review*, August 1945). *Ed. Note: See Man-Hours and Distribution*, Part II, page 7.

ENGINEER'S WORTH TO SOCIETY

Continued from page 12

within 24 hours. Telephones and radio would be replaced by the next highest speed communication system known in the past as wig-wagging, and the baby being born in the maternity ward would arrive in the world under approximately the same intensity of illumination as did his great-grandfather, 150 years ago. If we were to do away with electricity we would be back where we were 150 years ago.

Purpose of Engineering

The engineer has provided a power supply system which has made cheap energy available to nearly everyone. He has provided transportation systems of many forms. He has provided communication systems that have surpassed human concepts of a hundred years ago. However, the *main* purpose of all of this engineering is not to provide a comfortable existence. Engineering has a deeper meaning than the mere utilization of resources. Engineering is an instrument of "Social Progress." History has shown that the

great advances in literature, art and philosophy have been made by a comparatively few people who have been provided, through the economic and social systems in which they lived, with the opportunity to devote their time and energies to such advancements. In the early days this meant that many slaves were required for every scholar or member of the "intelligentsia" who was not devoting his time to the process of earning his own living. Today engineering achievements are providing an average equivalent of 50 slaves for every man, woman and child in this country. In so doing engineering has given nearly all of our people the opportunities for an intellectual development that heretofore was restricted to a very few. Thus we see that engineering is not only necessary if our American way of life is to be continued, but it is also a key to Technical, Social and Economic Progress.

Just how engineering will fit into our social order of the future is hard

Continued on page 50

Each in His Own Tongue—

By Publications Division 8741-1

VOICE OF THE PRICE SYSTEM

FOOD

It is quite probable that never in recent history has the nation been as well fed, considering the population as a whole. It is only natural that those groups of the population whose consumption has normally and habitually been relatively high should experience the illusion that there is a food shortage.

From *Business Conditions*, published by the Federal Reserve Bank of Chicago. (As reported in the *Chicago Sun*, July 1, 1945.)

FREE ENTERPRISE

During the war we have gotten away from the American idea of free enterprise and equal opportunity. The kind of conversion upon which I would like to see us center our attention is reconversion to the belief in the American way of life, the way under which we grew strong and had a capacity—though utterly unprepared—to win this war.

John M. Hancock, a partner in the investment banking firm of Lehman Bros., at a dinner meeting of the Economic Club of Chicago, December 11, 1944. (As reported in the *Chicago Sun*, December 12, 1944.)

DEPRESSIONS

... depressions are never abolished because they have many desirable features. Smart folks take advantage of the boom. They save what they can and keep their savings liquid. They are then ready for depression-

time bargains in every conceivable thing from a suit of clothes to a railroad.

Ralph M. Blodgett, advertising executive, of Des Moines, Iowa, in an article published by the Bureau of Economic and Business Research, College of Commerce, University of Illinois (as reported by Sydney J. Harris in his column 'Strictly Personal' in the *Chicago Daily News*, August 22, 1945.)

HOUSING

If we don't get rid of OPA rent restrictions we will not have much new residential construction. . . . Builders are ready to break ground for new projects, but they are tired of controls and programming and must be assured of freedom from restrictions.

Joseph E. Merriam, president of the National Association of Home Builders, and Floyd Dana, president of the Chicago Real Estate Board. (As quoted from an interview by Al Chase in the *Chicago Tribune*, August 18, 1945.)

WARFARE

War is a business, and to be successful it must be conducted on a profit and loss basis like any other business.

Al Williams, Military Expert of the Scripps-Howard papers in his column in the *Washington Daily News*, June 4, 1945. (As quoted by the Peoples Lobby Bulletin for July 1945.)

EMPLOYMENT

... in any case, full employment requires a perfection of

management that we have no right, in a democracy, to assume.

By the Editors of *Fortune*, in 'Transition to Peace; Business in A.D. 194Q' in *Fortune*, January 1944. (As quoted in the *Economic Outlook*, published by the CIO for June 1945.)

POLITICS

Let private enterprise remain but it's got to be enterprise. There is only one justification for either nationalization or private ownership—that is efficient service in the interest of the nation.

Herbert Morrison, lord president of the council in Britain's labor government, in a broadcast to America July 18, 1945. (As reported in the *Chicago Tribune*, August 19, 1945.)

ANTI-CONSERVATION

. . . in reality (TVA) is an anti-social institution, its evil effects far outweighing any social

progress and reform it professes to have promoted.

Andrew Jackson May (Dem. Ky.), Chairman of the House Military Affairs Committee in the July 1945 issue of *National Republic*. (As reported by Carleton Kent in his column in the *Chicago Daily Times*, July 7, 1945.)

CLERICALISM

With the cooperation between the South American countries increasing, French and English Roman Catholics in this country along with the Catholics of the United States and South America will be able to establish an order based upon the ideals and traditions of Christianity.

Father A. L. Davis of Ottawa University in a speech before a Catholic Youth Organization, quoted in the *Ottawa Journal*, January 19, 1942. (As reported by the *Converted Catholic* for June 1945.)

VOICE OF TECHNOLOGY

SOCIAL CHANGE

We are going to stand alone for the principles of free enterprise. And how long can we stand alone? Perhaps five or ten years. The handwriting is on the wall. . . . The days are not far off when the masses in our country may say: 'You and your systems have failed.'

Daniel J. Tobin, president of the International Teamsters Union. (As reported in the *Chicago Sun*, August 19, 1945.)

RACIAL STRIFE

Negroes and whites can never get along in a society such as ours based on competition and stratas

of importance in social and economic life.

Dr. Mandel Sherman, professor of educational psychology at the University of Chicago, speaking before the women's division of the Chicago Urban League, January 23, 1945. (As reported in the *Chicago Daily News*, January 24, 1945.)

EDUCATION

In our education we have ignored existing evils. We have presented to our children a system supposedly perfect. Our educators and citizens have lacked the courage to stand up against the opposition of those who would profit from suppression of essential facts. For years we have

seen the finest flower of our youth, graduates of our schools, universities, and law courses, those who might have shown private initiative, seduced and prostituted to the purposes of greed in the service of great corporations and financial institutions. Robots and hypocrites resulted.

While our schools and universities are dependent upon politically controlled legislators, or plutocratic donors through the great foundations or financial institutions, they must first meet the needs of those who feed them, rather than those who come to be fed. . . . When our educational system and its processes are investigated as the anthropologist investigates the cultures of other peoples, we shall see that we have no system, only an accumulation of anachronisms, of vested interests, of medieval leftovers. We shall discover that its processes are without biological orientation, that our educators have been engaged in hopeless, destructive fumbling in the dark jungle of what we call our intellectual life toward ends that are non-existent, towards goals that are mere will-o'-the-wisps.

Porter Sargent, outstanding educational leader in his book, *Between Two Wars* (The Failure of Education, 1920-1940). (As quoted in a review by W. C. Clugston in *The Progressive*, July 23, 1945.)

DEPRESSIONS

Depression was our number one problem, and it was still unsettled. The war temporarily solved it. When the war ends it is not safe to assume that we

will not find this same problem waiting for us after the obvious and immediate job of reemployment has been done.

John Maurice Clark, professor of economics at Columbia University. (As quoted in an editorial in the *Chicago Daily News*, February 14, 1945.)

THE ATOMIC BOMB

Classical economics and politics are out of the window. There won't even be any debate about 'private enterprise' in relation to this thing. It cannot be controlled by any group of people for their own profit. At one step, the state, dislike the thought as we may, becomes the only possible trustee of this tremendous power and, therefore, assumes an importance never before known in history.

By an unnamed correspondent, as quoted in *The Trading Post*, a department of the magazine *Business Week*, in its issue of August 18, 1945.

ATOMIC POWER

The energy liberated by the uranium fission will, it is to be hoped, in the years to come find application in power plants, thus raising the prosperity of all nations through collaboration and thereby also stimulating progress in the higher sense of the word.

Lise Meitner, famous Jewish woman physicist (who contributed significantly toward early efforts to split the atom in Europe) in an article in the *Chicago Sun*, August 22, 1945.

The oil required to fill the tanks of a single battleship would heat the average home for 20 years.—*Chicago Sun*, Sept. 3, 1945.

So Wags the World—

Fascism (Social Reaction)

vs.

Anti-Fascism (Social Advancement)

By Research Staff of Great Lakes Technocrat

With this issue GREAT LAKES TECHNOCRAT presents a new department. It consists of a digest of some of the more important fascist and anti-fascist social events occurring around the world. Standard Price System sources of information are used. In order to save space, these will not be quoted, but kept on file for reference. The incidents cited are mostly of the type played down by the Price System press. Therefore, they have not had wide circulation. The purpose here is to provide our readers with factual information of events on the world stage, so that they can evaluate the forces of fascism and anti-fascism in North America. At home or abroad, fascism is a menace to the Power Age civilization of North America.

NORTH AMERICA

The State Department recently published a 2,000 page report on American foreign relations in 1930. The chapter on Germany is very revealing. George A. Gordon the American charge d'affaires, at the time, wrote Secretary of State, Henry Stimson that 'Hitler received very substantial financial support from certain large industrial interests' in Germany. He also wrote that he had heard that 'Certain American financial interests' were actively backing Adolph Hitler and his Nazis as a means of combating trends toward socialism in Germany.

The 1945 census of Agriculture shows that the number of farms in the U.S. is still decreasing and that the average size of farms is still increasing. Two thousand out of the 3,087 counties report that the total number of farms dropped from 3,759,199 to 3,717,497 or 1.1 percent. Farm acreage in these counties rose 7.5 percent and average size of farms rose from 170.9 acres to 185.8 acres. The number of farms in Illinois dropped from 213,439 to 206,481. The aver-

age size of farms in Illinois is 153.2 acres. This is an increase of 5.4 percent in size of the average farm over 1940. The fact that the average size of farms in Illinois is smaller than the national average is accounted for by the addition of 600,000 acres to the State's croplands since 1940. Even at that there were 6,958 fewer farms in Illinois than in 1940.

CANADA

A statement prepared by a special committee and read at the 21st Conference of the United Church of Canada recently stated: 'We have reason to believe that many Roman Catholic clergy are being exempted from certain income tax obligations and we believe it is the responsibility of all clergy to pay such taxes in accordance with government regulations.'

The Canadian Army Newspaper *Maple Leaf*, published in Holland, proposes that Canada adopt a national flag and a national anthem. Said the *Maple Leaf*: 'There are some who would cry treason as soon as any one

suggests changing from the Union Jack and "God Save The King." That is their privilege. But it is foolish to regard as treason a desire for a country and a people to wish to identify themselves among nations, to strengthen the framework of national unity.'

The account gave some views of Canadian soldiers. Said a Lieutenant from Toronto, while stationed in Holland: 'I've not seen anything on this side of the Atlantic that's worth fighting to perpetuate.' Said another: 'The United States and Canada can keep to themselves and let tottering old Europe topple. We've lots of room in America for better Europeans who want to leave this antiquated ship.' Many similar statements have been made by Canadians in Holland. Several said that they favored a union between the United States and Canada.

SOUTH OF THE RIO GRANDE

In North America, north of the Rio Grande, the illiteracy rate runs about 6 percent and the illegitimacy rate around 2.4 percent. South of the Rio Grande, including all of South America, the illiteracy rate runs from 60 to 80 percent of the population and the illegitimacy rate from 25 to 50 percent. By their works shall ye know the fascists!

ARGENTINA

Testifying recently, before a Senate sub-committee, headed by Harley M. Kilgore (Dem. W. Va.), William L. Clayton, Assistant Secretary of State, stated that there were 104 business companies in Argentina which are known centers of espionage or other aggressive activity, i.e., German and other fascist activity. So far the Argentine Government has not moved against a single one of them.

A foreign correspondent for a Chicago paper reports that there is a

vigorous and growing underground movement in Argentine opposed to the government. It publishes six newspapers, which are circulated clandestinely. The movement is called Patria Libre. Estimated membership is 50,000, which, however, is almost totally unarmed. Over 1000 members of the underground are in prison at the present time.

BRAZIL

Monsignor Carlos Duarte, Bishop of Maura, was excommunicated from the Roman Catholic Church recently. His crime was openly to criticize the Vatican's policies. Bishop Duarte said he objected to the 'fascist infiltration of the clergy.' He stated his aim as being a church 'that will not feed on politics, as the Roman Church has since the third century.' Bishop Duarte has started a church of his own.

The Volta Redonda steel plant, the largest in South America, will be a fully functioning enterprise before the end of 1945. The prewar per capita consumption of steel in Brazil was 22 pounds. In the U.S.A. it was 880 pounds. In 1942 all Brazil's steel mills turned out only 160,000 tons of steel. In the same year the U.S.A. turned out over 80,000,000 tons. Volta Redonda will have an initial capacity of 1,000 metric tons daily. Ultimate capacity will be 1,000,000 tons a year.

COLOMBIA

In the summer of 1942 President Alfonso Lopez of Colombia was kidnapped. A number of Army officers were convicted of being implicated and sent to prison. On May 30, 1945, three men were arrested by the police of Bogota as they left a house on Carrera Cuarta.. They carried handbags which contained 18 revolvers, 200 cartridges, 1,000 pesos in cash and a 'series of compromising docu-

ments.' On June 1, 1945, fourteen imprisoned Army officers revolted and seized the prison where they were doing time for one or another attempt to overthrow the government. The revolt was quashed. In the middle of June 1945, bitter demonstrations broke out between the students of liberal National University and students at Jesuit Universidad Javeriana. President Lopez declared a state of siege. In the last two years, eight attempts have been made to overthrow the government. In March 1945, the government reported finding 1,000 bombs hidden in the cathedral at Bogota.

PERU

On January 7, 1945, the government of Peru issued a decree ordering that: 'All religious activities other than those of the Catholic (Roman) Church must be held inside the churches of the respective denominations.' The decree was based upon a constitutional provision 'permitting religious freedom but protecting the Catholic (Roman) Church.'

Peru is undertaking a large industrial development program. The program includes full development of the power potential of the Santa river, Peru's largest west coast stream. Work has begun on the 125,000 kilowatt Canyon del Pato project. In 1941 Peru's total installed power capacity was 219,746 kilowatts. In the U.S.A., for the same year, it was over 44,000,000 kilowatts. Full development of Peru's program envisions:

1. Development of anthracite reserves in the Santa valley, estimated at 10,000,000 tons.

2. Steel plant construction at Chimbote.

3. An irrigation project to fertilize 250,000 acres.

4. A cement mill and other industries based upon minerals said to exist

in this region. An export-import bank credit has been set up in favor of the Banco Central of Peru to finance purchases in the U. S. of materials and equipment required for the program.

EUROPE

GERMANY

Dr. Gerhard Alois Westrick, who was expelled from the United States in 1940 as being a Hitler emissary, is now directing efforts to salvage and revive German industry. Dr. Westrick was installed in his job by a Count Douglass, a British Associate of the International Telephone and Telegraph Company. Recently Dr. Westrick conferred with two higher officials of I.T.&T. at Schloss Langerstein in Baden. The I.T.&T. controls the Standard Electric Company of Berlin, Germany, whose president is Dr. Gerhard Alois Westrick.

During the war, the headquarters of the German General Staff was officially supposed to be in the center of Berlin, in the General Staff Building. Actually, this official headquarters was only a false front. The real headquarters was in the village of Zossen, a suburb of Berlin. Here the General Staff officers lived and worked in completely equipped and appointed quarters deep underground. Elevators led down to the offices and living quarters, from heavy concrete structures on the surface cleverly concealed in a patch of forest. The Red Army seemed to know all about this. When they moved in, they came so fast that they captured the entire installation intact. The Staff officers had fled, of course, but the technicians, who serviced and operated the complex radio, telegraph, telephone, air-conditioning, lighting and other apparatus, remained.

Hans Beltow, a German engineer, waited at the surface entrance for the

Russian soldiers. He conducted them cheerfully underground. The elevators were not working at the time so they descended by means of a spiral staircase. Down below, corridors led in all directions with rooms opening off the hallways. In the technical operating rooms there were crudely lettered signs, hanging from the apparatus at several points. They were printed in bad Russian and said: 'Soldiers, don't touch or damage the apparatus. It will be valuable booty for the Red Army.' The notices had been placed there by German technicians. And, where were these engineers and technicians? They had hidden themselves deeper underground in the huge safe of the Time Bureau, while the officers and auxiliary personnel of the General Staff were fleeing. They reasoned correctly that they had nothing to fear from the Red Army.

ENGLAND

On August 21, 1945, Dr. J. W. C. Wand was consecrated as Bishop of London for the Church of England. Two formal protests to the appointment, on the ground that Dr. Wand was a 'Roman Catholic and not a fit and proper person for the position' were presented to Vicar General Philip Baker Wilbraham in the vestry before the ceremony. When the procession entered St. Mary's Woolnoth Church, disorderly demonstrations broke out among the onlookers. Two hundred persons shouted, 'You are hirelings of Rome,' disturbing the consecration. The protests subsided only at intervals during the ceremony.

Ministry of Agriculture figures show that 600,000 less acres were farmed in the United Kingdom during the war than in the prewar years. Production of wheat, barley and oats was 3,500,000 tons greater, however, than in 1939, potatoes 4,500,000

tons greater, and a quarter million tons more sugar beets were raised. In 1944 the wheat crop was 82 percent above the 1939 level; barley 89 percent; oats 64 percent; rye 625 percent. In October 1944, Britain had 9,548,000 head of cattle, more than ever before in her history and fresh milk going into consumption was 37 percent more than in the last prewar year. The British Iron and Steel Federation has announced a five year program to extend steel production in Britain from 14,500,000 tons a year to 17,500,000 tons. Ten new blast furnaces are projected. When completed, there will be a total of 120 furnaces.

ASIA

CHINA

The United States loaned China \$500,000,000 in gold to help stabilize its inflated currency. The Chungking government adopted a policy of selling some of this gold from time to time so as to retire some of the surplus currency notes inflating the money market. The price was set at 20,000 Chinese dollars for one ounce of gold. This deflationary operation proceeded satisfactorily for a while. Then the Chungking government decided to speed up the deflationary process by raising the price of gold. Some insiders, carefully covered up, got wind of the government's plan. They passed the word to speculators. These chisellers hastened to buy up all the gold they could get for 20,000 dollars an ounce. A few days later, the government announced the new price of 35,000 dollars an ounce. Ergo, the gents who thriftily bought gold at 20,000 dollars an ounce turned right around and sold it for 35,000 dollars an ounce. The pro-fascists of Chungking cleaned up millions on the deal. And what of our Uncle Samuel and his efforts to stop inflation in China?

Don't worry about that. The beneficence of that old gentleman with the whiskers passeth all understanding. That's the Price System for you.

John Lucian Savage, chief designing engineer for the Bureau of Reclamation, was 'loaned' to China to investigate the possibility of building a gigantic dam on the Yangtze, the world's fourth longest river. His report was favorable. Savage designed Grand Coulee, Boulder Dam and sixty other dams. He is considered the world's greatest authority on hydro-electric projects. The site for the proposed dam is at Ichang, east of Chungking. Ultimate capacity, it is said, will be 10,500,000 kilowatts. Another 2,500,000 kilowatts could be developed on tributaries. Boulder and Grand Coulee combined are 2,353,800

kilowatts. It is said the dam would generate electricity incredibly cheap, would end the annual Central China floods, double crop production on 10,000,000 acres of farm land and permit 10,000 ton ships to come to Chungking, 650 miles from the ocean. Said Mr. Savage: 'With the possible exception of some tributary of the Amazon, this is, beyond all question in my personal experience, the greatest single potential source of hydro power in the world today.' The question of what a nation of 450,000,000 with a handicraft-agrarian civilization could possibly do with vast amounts of cheap electric power has not been answered. One suggestion is that it be utilized to make fertilizer to sell in the Orient so as to help raise more food. *Ed. Note: See Technocracy Study Course. Lesson 8.*

ENGINEERS WORTH TO SOCIETY

Continued from page 42

to say. But there is no reason to believe that progress is over. The fields of research have not been harvested. Science is not limited to the past. Knowledge stands before us like the Rock of Gibraltar and is just about as hard to penetrate. Every few years some rugged individual with plenty of originality, foresight and initiative appears on this rock with an ample supply of intellectual dynamite and proceeds to blast away some huge chunks. Then a lot of lesser individuals come along with their special tools and pick away at the pieces. Men who have blasted away some sizeable chunks are well known. When Edison invented the incandescent lamp he started the electric power industry which now has an annual revenue of two billion dollars. Bell with his in-

vention of the telephone started an industry that has revolutionized the country and at the present time employs 450,000 people. That is Engineering. When Westinghouse developed his A.C. system of transmission he made possible the use of energy in one part of the country from a source in another part. That is Engineering. When Kettering invented the electric starter for the automobile he placed under the hoods of American cars more H.P. in the form of starting motors than is installed in all the power houses in the country and at the same time prevented the breaking of 60,000 human arms annually. This is Engineering. Now all of these contributions are fundamental and they are all alike in one respect. They have lead to greater human happiness.

In the Question Box—

By Speakers Division 8741-1

Dears Sirs:

I am only a high-school student, but I am in sympathy with the program of Technocracy Inc. I have received two issues of your magazine from local section headquarters. I have enjoyed all of the articles and departments, and think you have an excellent magazine.

I noticed the request for questions from readers in the last 'Question Box.' There is one question that I would appreciate your answering for me. The question is this: 'Please explain fully the difference between Technocracy and socialism.' I know this may seem like a foolish question to anyone who has studied Technocracy, but this is one of the most frequent questions I run up against when talking to friends about Technocracy. It would be greatly appreciated if you would answer this question in concise terms in one of the forthcoming 'Question Boxes.'

Thanking you for your trouble,

Yours truly,

Henry Elsner, Jr.

Dear Mr. Elsner:

It would take more space than we have available to 'explain fully' the difference between Technocracy and socialism. The best we can do is to outline the major differences and let you carry it on from there. It will readily be seen that Technocracy has borrowed nothing from any school of socialism.

Types of Socialism

Philosophers have been dreaming up solutions to social problems for ages, inspired by humanitarian motives and instinctive yearnings. There are many records of attempts to outline ideal social systems. Some one once said 'socialism is a vast lake of philosophy into which all creeds dip for ideas. According to that definition, there is no end to the possible schools of thought on socialism. Besides primitive tribal communism and various Christian sects on communism, there are several main schools of socialism. Among these are Utopian, Fabian,

Christian, Guild and Marxian Socialism.

Most schools of socialism are either evolutionary or reformist in nature, seeking to correct only the worst abuses of the Price System or to reform it by degrees into some type of ideal commonwealth. Marxian socialism or communism, however, is revolutionary in character. The father of communism is Karl Marx, 1818-1883; its fundamental plan of action is the Communist Manifesto, written in 1848; and its basic textbook 'Das Kapital' was written from 1867 to 1894. In order to set forth the main differences between Communism and Technocracy, it will be necessary to compare the background, the foundation, the method of approach to social problems, and the end results of both communism and Technocracy.

COMMUNISM

Background

The background of communism is an old-world complex of a priori

philosophical and moral concepts about justice, liberty, equality and fraternity. These concepts arose out of the social problems of an older Continent where there is a poverty of natural resources, a backwardness of modern industrial growth and an established pattern of social stratification, together with a clash of diverse class interests handed down from ancient times. The background of communism antedates the industrial revolution. Because of that, the observations and studies of Karl Marx embodied in 'Das Kapital' are heavily weighted with moral and philosophical urges arising only out of a mental vacuum of hopes and ideals. The facts set forth by Karl Marx in 'Das Kapital' are valid only for the Victorian age, because they are based upon a study of the contemporary economic structure of that day and that land.

Foundation

The basis of communism is the materialistic conception of history, and the theory of the class struggle. The essentials of these concepts are that every historical incident can be traced to some economic reason, and that the whole history of mankind can be stated as a struggle between the owning class and the working class. This theory of history is called dialectic (logic of) materialism. This materialistic logic of Marx is offered as a philosophy of every department of social life.

Method of Approach to Social Problems

The plan of action communism proposes is outlined in the Communist Manifesto, and other literature. It is derived from the theory of the class struggle. According to this theory, as industrialization proceeds, the owning class will become smaller in numbers

and the working class correspondingly larger. When the proper imbalance is attained, the workers will revolt and establish the dictatorship of the proletariat. Thus, it is seen that communism's method of solving social problems is by the use of violence and the dictatorship of one group over the whole of society.

End Results of Communism

The end results of communism are proclaimed to be the abolition of classes, private property and the State, and the establishment of equality. The dictum is 'From each according to his ability and to each according to his need.' These stated aims are essentially a priori philosophic concepts. Finally, the end results of communism are international, and intended to be applied to the whole world.

TECHNOCRACY

Background

The background of Technocracy is a survey of the energy, natural resources and industrial capacity of North America, carried on by the Technical Alliance of North America, between 1919 and 1933. This survey established the physical factors which constitute the foundation of Technocracy's program, determine its method of approach, and dictate its end results. The Energy Survey of North America was an exhaustive scientific study of existing facts on this Continent today.

Foundation

The basis of Technocracy is the law of energy determinants and the application of the methods of science to the social order. The theory of energy determinants is new in human thought. It relates the fundamental physical law regarding the flow of

energy upon the earth and its application to social problems. It states that energy is basic in any society producing its physical wealth through the degradation of extraneous energy. The application of science to the social order lays down the credo that all social problems can be solved by scientific and technological methods.

Method of Approach to Social Problems

The method of Technocracy is educational. It is designed to provide Americans with unvarnished facts and scientific study of our common social problems; and to disseminate the design of a new social control to replace the Price System when it must be abandoned. This method of approach is non-political, non-Marxian and non-philosophical. Technocracy is not a pattern of action based upon violence, but a body of thought based upon education.

End Results of Technocracy

The end results of Technocracy is a scientifically organized, non-political social system in North America. This will be based upon a balanced load system of production and distribution, continuous full load operation of all industrial equipment and physical costs of accounting of production and distribution. It is designed for the North American Continent only. Technocracy does not guarantee to abolish classes, nor make people equal, nor even to make them happy. It only guarantees to provide an abundance, leisure and security for all citizens with equal opportunity in life through the operation of an efficient design. This design, as prepared and presented by Technocracy, is the mechanics of area operation under scientific and technological control—The Technate of America.

CONCLUSIONS

The background of communism lies in an economy of scarcity, and its concepts of materialism, the class struggle and the proletariat are valid only for the cultures and the time out of which they arose. The background of Technocracy lies in the most highly industrial Continent on earth and runs concurrently with the social culture of this day, the Power Age.

The foundations of communism are rooted in philosophical and political concepts of a struggle for power. These concepts exist only in the imaginations of those who persist in the economic dictums of the primary stages of the industrial revolution. The foundations of Technocracy arise out of Science and physical laws. It has no theory about the assumption of power, and is not a class movement, but the first social mass movement in history.

The method of communism is revolutionary in nature. Its use of violence, designed for industrially backward nations, would destroy all civilization in a highly industrialized country, where the complex development makes all people dependent on the uninterrupted operation of the industrial plant.

The method of Technocracy is to carry on a campaign of education to inform Americans of the nature of the physical trends undermining the Price System and to prepare against the inevitable breakdown or transition period that must come.

The end results of communism are abstract and vague. There is no such thing as equality, except in a graveyard, and since there is no such thing as equality, there will always be differentiation among individuals in any social system. The abolition of the State equals anarchy or a State where there is no State. This is insane.

The end results of Technocracy are stated thus: "The paramount concern of the social state is the welfare of the human components involved." Social classification will be upon the basis of social accomplishment. The Technate will be neither an autocracy, an oligarchy, nor an industrial democracy. It will be governed by principles of Science incorporated in the design which will be an orchestration of man and physical laws for the benefit of man.

SUMMARY

North America is a new Continent, possessed of abundant natural resources. It has more than 1,600,000,000 of installed horsepower, 73 percent of the graduate engineers of the world, the largest body of trained personnel on earth; 19 percent of the world's land area and only 9 percent of the world's population. Here are all the materials necessary for a culture of abundance, leisure and security.

America's social problem arose out of these conditions. A new culture has been developed here, the culture of the Power Age. Its problems are the problems of the Power Age. They are as new and different from the social problems of other lands and times as its culture is. Therefore, the solution must be new and different too. All philosophical and political approaches to social problems, from Plato up to and including Karl Marx, must be avoided. They arose out of foreign cultures and their dictums are foreign to America. To postulate a solution of today's problems on yesterday's facts is proof of arrested mental development.

The complex industrial development of this Continent determines that a communist revolution or a fascist coup de tat would mean the

stoppage or destruction of the equipment upon which all Americans are dependent. This would be fatal to 75 percent of the population. The operation of this complex equipment requires the services of the Scientist and Engineers, no less than that of the untrained, and vice versa. Ninety-eight percent of all power used today in American industry is derived from coal, oil, gas, wind or falling water. The concept that human labor produces all wealth is not valid in America. Physical goods and services are the result of the application of extraneous energy and technological methods in industry. Most of the actual human labor is supervisory, attendant or accessory in nature, and even that is steadily being taken over by automatic mechanisms and the photo-electric cell.

There never was any fixed social stratification in America. Class lines have always been fluid. Consequently, the theory of the class struggle does not fit the picture here. All Americans belong to the same class, as they are all struggling to chisel an existence out of a dying economic order. The theory that the most untrained workers could take over and operate a complex industrial mechanism by some magic called 'industrial democracy' is insane. It ignores all the facts. There is no democracy in production and distribution; there is only design and function. Successful operation of modern equipment requires specialized knowledge and training. Either a thing works or it doesn't. If it works, it is functional, and no democracy is needed. If it does not work, no amount of democracy will cause it to function. The factor which determines the workability of any process is its design. Beliefs and opinions have nothing to do with it.

America's social problem must be solved upon the basis of society as a

whole instead of the theories of any pressure groups. The stupid reactionary and the emotional radical are alike incompetent. Communism is an organized effort by incompetent, emotional radicals to overthrow by force the dying economic order and substitute a 'workers' paradise.' Fascism is the consolidation by stupid reactionaries of all minor rackets into a major monopoly to preserve by force the dying economic order, for as long as possible. 'After me, the flood.'

Did I Say No?

'Do you know that the right to gripe actually belongs only to those who are doing something to maintain all human rights? You realize that Europe was softened up by getting the minorities inside nations scrapping with one another, don't you? You know, too, don't you, that whoever you are, you belong to several minority groups yourself?

'Are you going to get up a little alley-cat gang to "protect" your prejudices, childish fears,, and selfish interests?

'Can you tell the difference between a fact and an opinion?

'If the answer to that is no, then you realize, don't you, that your brain is merely a small whirlpool of self-administered mickey finns?'—Philip Wylie, author and columnist, in the *New York Post* (quoted in *Everybody's Digest*, Aug. 1945).

'TO WHOM IT MAY CONCERN:
It is my considered editorial opinion that 75 percent of all published books are worth a maximum of 25 cents each. This is a generous figure.'—Philip Wylie, author if *Generation of Vipers*, in the *Chicago Daily News*, Dec. 6, 1944.

'Free speech does not give any one the right to shout fire in a crowded theatre.' (The late Oliver Wendell Holmes, Justice of the U. S. Supreme Court.)

Today it is possible on the North American Continent to achieve the highest standard of living and civilization ever known on this earth. All the essential necessities are here. It is a physical certainty if we organize to get it.

Technocracy is the social aspect of Science. It calls on all Americans to unite and operate in a culture of abundance; or perish in the shambles of the dying Price System.

Agrotechnology

'A farm with a power demand of 3,500 kw . . . with a connected load of 14,000 hp. in 1,000 motors, was described by B. L. England, Atlantic City Electric Co. (at Nov. 13, 1944 meeting of the Interstate Power Club, New York City). This superfarm in Southern New Jersey contains 30,000 acres, uses power for refrigeration and quick-freezing, for irrigation, for dehydration and for many other operations and consumes around 15,000,000 kw-hrs. (of electricity) annually. This will be more such operations after the war, according to Mr. England.'—*Electrical World*, Nov. 18, 1944.

'If some Office of Production Research & Development projects sound imaginative, you should see the schemes officials have turned down—the proposed study of "mechanical equipment for soiless agriculture" in California.'—S. H. Scheibla, in his article 'America's Amazing Invention Incubator,' in the *Wall St. Journal* 1/26/45 (Italics ours).

'Chrysler used to say more speed for the automobile wasn't a problem; the problem was how to stop them. Our money spenders are in the same position—they can't quit now—that would mean economic suicide. Three hundred billions for War—why not 300 billions for Peace?—From the *Journal of the Ohio State Chiropractic Society*, April-May 1945.

Language of Facts

'There is magic in graphs. The profile of a curve reveals in a flash a whole situation—the life history of an epidemic, a panic or an era of prosperity. The curve informs the mind, awakens the imagination, convinces. Graphs carry the message home. A universal language, graphs convey information directly to the mind. Without complexity there is imaged to the eye a magnitude to be remembered. Words have wings, but graphs interpret. Graphs are pure quantity, stripped of verbal sham, reduced to dimension, vivid, unescapable.

'Graphs are all inclusive. No fact is too slight or too great to plot to a scale suited to the eye. Graphs may record the path of an ion or the orbit of the sun, the rise of a civilization, or the acceleration of a bullet, the climate of a century or the varying pressure of a heart beat, the growth of a business, or the nerve reactions of a child.

'The graphic art depicts magnitudes to the eye. It does more. It compels the seeing of relations. We may portray by simple graphic methods whole masses of intricate routine, the organization of an enterprise, or the plan of a campaign. Graphs serve as storm signals for the manager, statesman, engineer; as potent narratives for the actuary, statistic, naturalist; and as forceful engines of research for science, technology and industry. They display results. They disclose new facts and laws. They reveal discoveries as the bud unfolds the flower.

'The graphic language is modern. We are learning its alphabet. That it will develop a lexicon and a literature marvelous for its vividness and the variety of its application is inevitable. Graphs are dynamic, dramatic. They epitomize an epoch, each dot a fact, each slope an event, each curve a history. Wherever there are data to record, inferences to draw, or facts to tell, graphs furnish the unrivalled means whose power we are just beginning to realize and to apply.'

By Henry D. Hubbard, National Bureau of Standards, Washington, D. C.

Some Technocracy Section addresses in Great Lakes area

- 8040-1—204 Columbia Bldg., Pittsburgh, Pa.
- 8040-2—Box 356, Ambridge, Pa.
- 8040-3—340 Brighton Ave., Rochester, Pa.
- 8041-1—1613 East 51st St., Ashtabula, Ohio.
- 8141-3—39 E. Market St., Akron, Ohio.
- 8141-4—2237 Front St., Cuyahoga Falls, Ohio.
- 8141-7—P. O. Box 270, Barberton, O.
- 8141-14—P. O. Box 553, Kent, Ohio.
- 8141-15—10537 St. Clair Ave., Cleveland 8, Ohio.
- 8240-1—207 N. Washington St., Galion, Ohio.
- R. D. 8242—c/o Arthur C. Clayton, Marine City, R. No. 1, Mich.
- R. D. 8242—c/o John Reynolds, St. Clair, R. No. 2, Mich.
- 8341-1—1430 Adams St., Toledo 2, Ohio.
- 8342-1—9108 Woodward Ave., Detroit 2, Mich.
- 8342-2—708 Garland St., Flint 4, Mich.
- 8342-2—55 Niagara, Pontiac, Mich.
- 8439-1—P. O. Box 81, Station A, Dayton, Ohio.
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- 8743-1—2204 W. Vliet St., Milwaukee 5, Wis.
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- 8844-2—1011 W. College Ave., Appleton, Wis.
- 8844-3—135 Van St., Neenah, Wis.
- 9038-1—4518 Delmar Blvd., St. Louis, Mo.
- R. D. 9041—2428 13th Ave., Rock Island, Ill.
- R. D. 9140—18 N. 5th St., Keokuk, Iowa.
- 9344-1—28 N. 8th St., Minneapolis 3, Minn.
- R. D. 9344—527 Wabasha St., St. Paul 2, Minn.
- 9439-1—817 Walnut St., Kansas City, Mo.
- 9648-1—P. O. Box 178, Warren, Minn.
- R. D. 9737—4442 Bayley, Wichita 9, Kan.

TECHNOCRACY

NORTH AMERICA'S ONLY SOCIAL DYNAMIC

WHAT?

★ Technocracy is the only North American social movement with a North American program which has become widespread on this continent. It has no affiliation with any other organization, group or association either in North America or elsewhere.

★ The basic unit of Technocracy is the chartered Section consisting of a minimum of 25 members and running up to several hundred.

★ It is not a commercial organization or a political party; it has no financial subsidy or endowment and has no debts. Technocracy is supported entirely by the dues and donations of its own members. The widespread membership activities of Technocracy are performed voluntarily; no royalties, commissions or bonuses are paid, and only a small full-time staff receives subsistence allowances. The annual dues are \$6.00 which are paid by the member to his local Section.

★ Members wear the chromium and vermillion insignia of Technocracy—the Monad, an ancient generic symbol signifying balance.

WHERE?

★ There are units and members of Technocracy in almost every State in the U. S. and in all Provinces in Canada, and in addition there are members in Alaska, Hawaii, Panama, Puerto Rico and in numerous other places with the Armed Forces.

★ Members of Technocracy are glad to travel many miles to discuss Technocracy's Victory Program with any interested people and Continental Headquarters will be pleased to inform anyone of the location of the nearest Technocracy unit.

WHEN?

★ Technocracy originated in the winter of 1918-1919 when Howard Scott formed a group of scientists, engineers and economists that became known in 1920 as the Technical Alliance—a research organization. In 1933 it was incorporated under the laws of the State of New York as a non-profit, non-political, non-sectarian membership organization. In 1934, Howard Scott, Director-in-Chief, made his first Continental lecture tour which laid the foundations of the present nation-wide membership organization. Since 1934 Technocracy has grown steadily without any spectacular spurts, revivals, collapses or rebirths. This is in spite of the fact that the press has generally 'held the lid' on Technocracy, until early in 1942 when it made the tremendous 'discovery' that Technocracy had been reborn suddenly full-fledged with all its members, headquarters, etc., in full swing!

WHO?

★ Technocracy was built in North America by North Americans. It is composed of North American citizens of all walks of life, Technocracy's membership is a composite of all the occupations, economic levels, races and religions which make up this continent. Membership is open only to North American citizens. Aliens, Asiatics and politicians are not eligible. (By politicians is meant those holding elective political office or active office in any political party.)

★ Doctor, lawyer, storekeeper, farmer, mechanic, teacher, preacher or housewife—as long as you are a patriotic North American—you are welcome in Technocracy.

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843 Belmont Avenue,
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GREAT LAKES TECHNOCRAT

Jan - Feb - 1946

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Number 8

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Illustrating the Futility of Price System Methods of Operation; Interpreting the Trend of Events from the Social Aspects of Science; and Presenting the Specifications for Total Mobilization for Peace!

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TECHNOCRACY LITERATURE

MAGAZINES

Technocracy,

155 East 44th St., New York 17, N. Y. 15 cents, no subscriptions.

The Technocrat,

8113 S. Vermont Ave., Los Angeles 44, Calif. 15 cents, \$1.50 for 12 issues.

Northwest Technocrat,

813 Pine Street, Seattle 1, Wash., 15 cents, \$1.50 for 12 issues.

Technocratic America

R. R. No. 2, Box 110, Fontana, Calif., 5 cents, 50 cents for 12 issues.

PAMPHLETS

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TECHNOCRACY DIGEST

Science Is Your Social Security

Accept No Substitutes

By Alice Langan

In spite of all the philosophical drivel about the glory of war and the joys of rugged individualism, man is a social creature who craves social security. He will fight and die to obtain even a meager portion of it. The desire for security has been as a whip on his back for ages. The Operating Rules of the Price System are largely calculated around this deep-rooted fact. All of its rewards are negotiable in terms of individual security at the expense of others. So far only a blessed few on top of the social dung heap have ever managed to cash in. Social Security is still the great mirage of the Price System, for most citizens. Nevertheless, a real Social Security is available for all citizens in North America. This article tells you what it is and how to get it.

Three Strikes and You're Out

THERE is an old saying that there are three things every human being can be sure of—(1) that he is born, (2) that he gets married, and (3) that he dies. Obviously, one must be born to be here. Did you ever realize the conditions to which 98 percent of Americans are born? A recent survey in Illinois showed that 100 to 150 babies out of each 1,000 born in the slum areas die. More decent neighborhoods do a little better; only 30 out of 1,000 die. In other words, five times as many babies die in the slum areas; and in Chicago alone the blighted and near blighted areas occupy 22 square miles.

Each year 250,000 or more babies are born in the United States to mothers unattended by even a nurse. The chance of a mother living to enjoy the child she bears is improving, for mortality was cut one-third in the first years of this decade. Only 20 white mothers per 10,000 births died in 1943.

Into what sort of a home are you apt to make your entry? For about 98 percent of us, conditions are anything but good. According to Dorothy Thompson in the *Ladies Home Journal* of September 1944, nearly

one-third of all houses in America are without running water, nearly one-fourth are without electric lights, 35 percent are without toilets, and 40 percent are without any bathing facilities whatsoever. This is the 'high standard of living' of which the politicians speak.

What are your educational chances under our much vaunted 'high standard of living'? Four percent of adults have never gone to school at all; 13 percent never got beyond the fourth grade; 56 percent got only as far as the 8th grade or less; this despite the politicians' having passed a law making education compulsory up to the age of 16. Seventy-five percent never finish high school, and less than 15 percent got the 'higher' education of college. This lack of education and training accounts for the fact that today, right now, 40 percent of Americans are occupational misfits, one-third of all men at the age of 40 are still looking for jobs with a future, and only 30 percent ever find the right occupation.

As to that second sure thing, marriage, there are 3 million more women of marriageable age in the United States than there are men available. No security there, ladies!

If you manage to survive the benefits of a 'high standard of living' and reach the age of 65, the retirement age under the Price System social security set-up, it may be your privilege to be one of that group of 60 percent of all persons 65 years or over who are supported by charity.

Since politicians certainly have not been concerned with the health of their constituents, it is easy to see why cancer kills more people in 2 years than we lost in 4 years of war, or why Penicillin, that life saver, although discovered in 1929, was not used until war forced it out of hiding to heal men wounded fighting for The American Way.

Chippy On The Fence

Year after year, politicians have been making promises, never intending to fulfill at least one-half of them, and totally unable to fulfill the other half. When the politician 'flops' on these promises, does he acknowledge responsibility? Certainly not! Senator Murray explains why, writing in *Collier's* of October 6, 1945, sponsoring the full employment bill, where he said:

Traditionally, the fine art of buck-passing has flourished in Washington as nowhere else in the world. When things go wrong, the President can always blame Congress. The Senate can blame the House. The House Democrats can shift the burden to the House Republicans and the House Republicans can pass the buck to the White House. Hunting for responsibility among the 96 committees of Congress is like hunting for a needle in a haystack. There is no over-all responsibility for the Acts of Congress as it is now constituted.

Yet it is this body, these politicians, who are going to legislate into ex-

istence 60,000,000 jobs, this body which has 'no over-all responsibility.'

Let us state unequivocally that it is impossible to provide 60 million jobs by legislation or in any other Price System way. For a quarter of a century, the problem in America has not been one of production, but rather one of how to distribute the goods produced not by man-hours of labor but by power, machines, technological methods.

America today is not the America of even 25 years ago; certainly not the America of 150 years ago when human muscles did perform the major portion of the work done. America today produces its goods and services by the use of all kinds of technology, both on the farm and in the factory.

Since the tractor was introduced, output per worker on farms has increased 80 percent. By 1946, business economists say that only 83 persons out of 100 employed in 1940 will be needed to produce the goods formerly produced by 100. Seventeen out of every 100 persons who were employed in 1940 will be permanently displaced, no longer needed to produce anything.

According to the *Wall Street Journal* of September 9, 1945, the greatest expansion in any five-year period of the country took place during the war years 1940 to 1944, for productive capacity rose 40 percent and industry's output was doubled.

The Invisible Labor Force

Mr. F. R. Moulton of the Brookings Institute, on December 15, 1944, made it very clear who is doing the work in North America. He said:

Electricity does 50 times as much work in the U. S. as all the millions of human beings, horses, oxen, etc. Three-fourths of this development has come since 1920 and *all* of it since our old men were boys. (*italics ours*)

It is because electricity and other technology are doing the work and producing the goods that we in the United States in the war year 1944 produced an all-time high of consumer goods, more even than in the record year 1929, despite the fact that 12 million adults were in the armed forces, half a million in the Merchant Marine, three million in Federal Government employment, and 12 million engaged in direct production of war materials. Twenty-seven million persons were withdrawn from the production of civilian goods; nevertheless in 1944 we produced an all-time record high of such goods. Man-hours of labor did not do it; extraneous energy, machines and technological methods did.

The use of any kind of extraneous energy, or energy outside of the human body in industry decrees inevitably that man-hours of labor will be permanently displaced in direct proportion to the application of energy. William F. Ogburn, Professor of Sociology of the University of Chicago, on August 12, 1945, in a radio discussion, foresaw the end of human toil. He said:

Any great new use of energy has the potentialities of reducing, and, I may say, even abolishing human toil. We might if we look forward into the future even have factories without any laborers in them at all; but, of course, this will all come slowly.

Not so slowly, Mr. Ogburn! Today, 22 million persons, with modern technology, could produce all the goods and services that citizens of the United States need. What about the other 38 million jobs being promised by the politicians? Of the physical factors involved in our social structure, the politician knows nought and cares less.

Why do you and I and 98 percent of the balance of North Americans want jobs anyway? Because we love to work? Certainly that cannot be the reason, for any one will tell you that the time he enjoys most is time away from the job. If you were to believe the ads of industrial concerns, we must have jobs because that is 'the American Way.' And so it is! Under a Price System, you and I (by working) must exchange our man-hours of labor for purchasing power. Then we must exchange purchasing power for goods and services. Consequently, if you don't have a job, you cannot have purchasing power; and if you don't have purchasing power, you cannot get goods and services.

Have You Got It?

You and I have been told by the politicians that we must continue the high purchasing power of the war years. Very few of us challenge the statement, and a great many Americans are convinced that purchasing power was high at least during the war, if not before. Since few Americans read the Statistical Abstract of the U. S., it is difficult for them to realize that in 1943 these were the income levels of American life:

- 6,923,000 families lived on less than \$1,000 per year and were continually facing starvation;
- 9,757,000 families lived on incomes between \$1,000 and \$2,00 per year, and were continually fighting poverty;
- 6,805,000 families had between \$2,000 and \$3,000 per year, still considered sub-standard living in the U. S.;
- 4,236,000 families did manage to obtain sufficient pur-

chasing power for health standards, somewhere between \$3,000 and \$4,000 per year;

2,486,000 families were in the comfortable middle class, and even they did not get more than \$5,000 per year;

1,805,000 families were able to afford luxuries, earning up to \$7,500 per year;

597,000 families built up savings, earning up to \$10,000 per year; and

751,000 families achieved incomes over \$10,000 per year.

These figures are not far above the figures of 1938, a depression year. The war made it possible to exchange more man-hours for purchasing power, for we produced war materiel in addition to high civilian production, but the war lasted such a little while.

A few days after war's end, the *United States News* of August 24, 1945, estimated that income payments to individuals would drop from the 1944 rate of \$163 billion to \$120 billion or a 20 percent decline. The Federal Reserve Board has just released results of a significant study. It concerns the wartime savings of the mass of workers who are going to 'spend the nation into prosperity.' Oh, yeah! The survey revealed that the top third families in the income group held 77 percent of all savings; the middle third 17 percent and the lower third only 6 percent. (*Labor*, Oct. 20, 1945) With two-thirds of the families holding only 23 percent of all the savings, who's going to spend what?

The political candidate stomping the country during the last Presidential campaign on a platform of full em-

ployment because of the demand for goods, completely overlooked the fact that in 1938 there was just as much need for the articles which he said business was going to produce in the postwar and which would provide employment. In 1938, 24 million families needed refrigerators and 20 million needed washing machines. These luxuries of the American Way of Life were not within their reach then for they did not have sufficient purchasing power. They did not have sufficient purchasing power, since goods and services, including washing machines and refrigerators, are produced by technological methods and not by man-hours of labor.

There's only one way to get purchasing power under the Price System; you must sell your man-hours in exchange for it. Under the demands of producing for war, man-hours were at a higher premium. The politicians assume this will continue, that they can legislate more jobs into existence than were possible even during the wartime peak, and so keep purchasing power at a high level. Somehow, disregarding all the physical factors, the politicians are intent on guaranteeing the American Way of Life.

Prognosis Difficult

Lionel D. Edie, economist and long-time observer of American industrial trends, in *Power Magazine* of January 1945, issues a warning, however, when he states:

Mechanization of plant and equipment is the *only answer* to the high hourly and weekly wage rates which will prevail after the war. The war will leave industry saddled with high labor cost, from which the only escape will be through mechanization. This trend toward mechanization will culminate in a great boom in the

production of *labor-saving machinery* of all kinds. (Italics ours)

And, ladies and gentlemen, the promises of the politicians notwithstanding, labor-saving machinery does not mean a high degree of purchasing power. It does mean lower operating costs for business; lower salaries for the worker; and lower total mass purchasing power.

To offset the glowing promises of the politicians to legislate 60 million jobs into existence, the *United States News*, on August 10, 1945, five days before the war ended, realistically estimated the postwar job prospect:

10,700,000 jobless is a prospect. Early months of 1946 will hold little promise of relief in event the war ends by Oct. 1945. Wages would fall for most industrial workers who keep their jobs. Of the 10,700,000 unemployed in mid-1946, only 400,000 could expect to find jobs by Oct. 1, 1946. By the end of 1946, the number of jobless will still approximate 7,700,000 persons, even though *production approaches peacetime peaks*. (Italics ours)

Of course, this dire forboding of continued long-time unemployment was later tempered somewhat by the *United States News* indicating that 9 million unemployed 'does not mean fewer jobs; it just means more job-seekers.'

This quotation from a recent issue of *Power Magazine* might be entitled 'Truth and Consequences' except that the second sentence, guaranteeing a good living for all under the Price System when more production is achieved per man-hour is not the consequence of the first sentence:

Postwar America will achieve a higher production per man-hour

than the world has ever known. They know that nothing else can insure a sound economy *with good living for all*. (Italics ours)

The facts are the opposite. At no time did a 'good living for all' follow high production in the Price System. On the contrary. High production means lowered purchasing power. Any distribution which takes place is merely incidental under our economic system. The basis on which the Price System works, and in reality the only reason for its existence, is scarcity conditions, when goods can be sold at the highest price (and profit) obtainable.

Business is in business for the prime purpose of making money. Politicians naively assume that simply by legislating 60,000,000 jobs as being necessary, these jobs will be provided by business to every American 'willing to work' be he civilian or returned soldier. In North America, we have achieved high production during war and prior thereto, we have achieved abundance, but not by hiring men. We did it by hiring machines.

Let's Reconvert Back To War

Having produced abundance, it becomes a menace to the further operation of the Price System; therefore abundance must go. Go it certainly did in the 'plowing under' of surplus goods, food, cotton, planes, etc., and in the expediency of war which 'blew up' much of the surplus and destroyed a lot of the abundance produced by technology.

The reason for wars seems to be adequately explained by that shrewd and practical observer of economic trends, R. L. Williams, President of Chicago & Northwestern Railway, who made a statement in the *Chicago Daily News* of May 17, 1945, to the effect that:

Every year of a war means good business for a year after it ends. The war has lasted 5 years; therefore, I expect 5 years of better than normal business.

Mr. Williams, of course may be right; war itself has always been good business, even if it was not such 'good dying.'

The politicians in adopting the slogans of 'full employment' seem convinced that we will have better than normal business, for never before in our history have 60 million people ever been employed at one time. If it were possible to provide that many jobs, almost immediately upon its achievement, the Price System would fold up. The reason is that the resultant abundant production would flood the market in such a short time. Labor would have to 'fold its tents like the Arabs and silently steal away.' Where To?

Americans facing the uncertainties of the reconversion period are desperately eager to believe that the politicians can somehow legislate prosperity into existence. In that lies America's danger. If we hope too long, chaos will descend upon us. Let the politicians try to legislate that away.

Senators and Congressmen, practicing the traditional art of buck-passing, will seek to shift the blame when the inevitable happens and they are unable to make good on their full employment promises. Congress, however, had better beware of passing the buck to business. The Price System press contains some warnings at least that 60 million jobs cannot be achieved. President Allan Sproul of the Federal Reserve Bank of New York, goes further. In *The Chicago Tribune* of August 25, 1945, he is quoted as saying:

I should deplore an assurance of full employment. So far as

known, full employment has never been achieved for any period of time in a modern state, except under a program of preparations for War (Germany and Russia) or under the *compelling needs of actual war, as recently in the U. S.* (Italics ours)

Wallace R. Deuel, in the *Chicago Daily News* of September 13, 1945, says:

It is a stark and terrible fact that the only way the Western World has kept itself going economically for 27 years has been by borrowing and spending to get ready for and fight a war.

The Second World War is over. What are the immediate prospects for the future? They are not pleasant to contemplate, but face them we must.

Tag, You're It

The peak of wartime employment was reached with a working force of 51,946,000. A working force of 51,000,000 is almost 6 million more jobs than even existed in 1939. Sixty million jobs means 15 million more than existed in 1939. That is a very big order.

It has been estimated that approximately 75 percent of Veterans did not have any jobs at all before entering the armed services, some because they were too young, others because they were unable to find employment in the Great Depression.

Those Veterans seeking small businesses with the aid of G.I. Loans, are warned by the *Chicago Tribune* of July 13, 1945, that the banks are informing Veterans that 30 percent of all small business ventures fail in the first year, 15 percent more in the second year, and that only one out of five remains at the end of 10 years. Oh, yes, we take good care of our Veterans, for how long?

Are you over 45? Almost two-fifths of those employed in the civilian labor force are 45 years of age or over. Nearly 3 million are over 65. Remember the prewar period when the trend indicated a steady reduction in the proportion of older workers in industry? Remember the 'over 40' clubs, organized because men over 40, in the good old days of 1933 to 1941, were considered too old to be hired!

The great battle of the Unions, fighting for guaranteed wages, or at least for 48 hours' pay for only 40 hours' work, will be lost, not by capital's bitter fight to prevent it, but to the physical factors which make either one of those goals impossible of achievement. Take heed of the warning issued via the *Paterson, New Jersey, News*, that 'there will be plenty of work for those who are willing to work and do not cling too long to the idea that inflated and extravagant war-time wages can be paid by private industry.' Private industry's answer will be mechanization of plant and equipment.

Congress and the politicians are going to find it very difficult to pass the buck when the 60,000,000 jobs fail to materialize. Senator Taft, on October 26, 1945, made a fine buck-passing attempt when he stated that—

The Declaration of Independence does not even guarantee happiness. It guarantees the right to pursue happiness. All we can guarantee (by the full employment bill) is the *right to pursue jobs*. (Italics ours)

A Real Deferred Demand

A new declaration of independence is therefore in order and a new concept of citizenship is needed. Let's declare ourselves freed from the concepts conceived prior to the year 1648, particularly those concepts dealing with the 'nobility of toil' and the 'right to

work' and let us face the realization that in the New America of Abundance, human toil will be almost entirely eliminated, but security from birth to death will be mandatory.

As early as 1935, J. Roscoe Drummond, Executive Editor of the *Christian Science Monitor*, gave us an inkling of the new social responsibilities we individually and collectively would have to face, for he said:

While we have been facing the challenge of a grim depression and a still grimmer unemployment, *we have been deferring the challenge of modern science*. We know that a scientific development capable of revolutionizing the nation's economy is possible whenever we are prepared to accept the social and industrial responsibilities essential to its realization. (Italics ours)

Ten years later, ten years of great physical change on this Continent, in an advertisement of the McGraw Hill Publishing Company in 1945, Mr. James H. McGraw, Jr., states our dilemma:

At one giant stride our scientific and technological development has so far outdistanced our social engineering that *we have no choice* but to turn our full powers of creative imagination to control the forces we have unleashed and to bend them to man's use rather than to his destruction. (Italics ours)

Technocracy has the blueprints of that design of social engineering; the design of operating the North American Continent as one geographic unit under the technological control, which has been ready and waiting for 12 years; waiting for the mass movement which will inevitably take place when it is no longer possible to stay alive under the Price System. It is not pos-

sible now for any politicians, or any one else, to provide 60,000,000 jobs; and under no circumstances whatsoever will it be possible in the future. It IS possible NOW to have security through science, with abundance for all.

The social program of Technocracy is very clear; its record is written in its literature for all to read. Its design of operating under a technological control is based on all of the physical factors involved. It makes no promise that cannot be fulfilled. Its social program is based on the fact that our modern technology, coupled with the vast resources of this Continent, make it possible to increase production so that we can provide an abundance of goods and services to meet all the requirements of each and every North American citizen.

Here are some results which can be realized by operating this Continent on the basis of a designed technological social unit.

What's Holding Up Delivery?

Standard of Living: A higher standard of living for everyone, the highest in the world. All productive capacity would be released from artificial restrictions. A maximum, unrestricted distribution would be made to all citizens without differentiation in incomes, based on the total goods and services available in any given time-period.

Housing: Redesigned housing, machines for living, for the entire population, measuring up to the standards of modern technology. There would be no mortgages, taxes, or financial assessments.

Hours: Reduction of working hours in direct ratio to the diminishing total of man-hours required. Under full load operation working shifts could be reduced to 4 hours per day, 4 days per week.

Retirement: Full income, after retirement, until death. This is not an old-age pension, but continued participation in the abundance of available goods and services.

Production: Capacity operation of physical equipment on a balanced-load basis.

Education: Education of a new, high standard for all up to the age of 25 with specialized training for all in chosen fields.

Health: Full medical and dental attention for everyone as a compulsory service through the Continental Public Health Sequence.

Freedom: Full opportunity for everyone to spend leisure time in any manner desired. Freedom from restraint in religion, speech, culture, sports, and hobbies.

Opportunity: Equal opportunity for every boy and girl, every man and woman, to take his or her place in society to the degree of his or her attainments and ability.

Money: Elimination of money and consequently of debts, taxes, insurance, etc.

Listening any longer to political parties will lead us down the road to economic chaos and disaster. Abundance and social security cannot be dispensed to the people of Canada and United States by any political party administration of this Price System, whether of the Left or of the Right. Those who advocate any or all of the political nostrums are in actuality counter-revolutionists seeking to delay or to sabotage the arrival of the New America of Abundance.

Which do you want for yourself and your children, chaos under the Price System, or Social Security with Science in a Technate of North America?

You have but one more chance—It is the eleventh hour!

Investigate Technocracy!

Deep From The Heart of Texas

Long Horns or Long Heads

By Sgt. Scoop

One Nation Indivisible

IT's one nation, the United States of America of ours, but sectional worries and jealousies crop up repeatedly. Frequently the causes of a sectional worry illustrate forcefully that fuller integration of our nation's facilities and longer-range planning of our resource utilization is absolutely essential to our future. A case in point is related in an editorial in the *Dallas Morning News*, June 14, 1945.

The nation has great recurring resources, like vast forests and expanses of grassland. It has other great resources which are not recurring, a fact that brings the need for conservation into sharp focus. The major part of the aforementioned editorial is quoted here to illustrate a Texan position on the dissipation of one major non-recurring natural resource, natural gas.

Every loyal Texan wants Texas to do, not merely its per capita share of the war effort, but its utmost share, according to its human and material resources. Yet, while doing this, we should also do a little calm reflecting upon the terrific rate of speed at which our Texas resources are being taken. For example, between 1940 and 1944 the petroleum production of the United States was increased 324,539,000 barrels annually. In the same period of time the Texas production was increased 421,226,000 barrels. In other words, Texas' oil reserves were tapped for the entire increase for war purposes and nearly 100 million

dollars in addition to offset decreased production in some states.

At the same time we have a flurry of actual and tentative construction of high-pressure natural gas pipelines to take Texas gas to the Appalachian coal fields, the Ohio Valley, the Atlantic Seaboard, California and Mexico. The plan to store Texas gas in Canada is an example of the extent to which this most valuable of Texas' natural resources is being shipped abroad for the utilization of others. West Virginia's natural gas fields are now being repressured with Texas gas.

The argument is made that Texas has greater oil and gas reserves than any other state and should, therefore, contribute a greater part. There is some substance in this argument, but it overlooks that fact that Texas does not have reserves of other fuels. When the oil and gas are gone our really great fuel resources are very largely dissipated. Yet today our natural gas, the world's finest fuel, is being sold at the well for 3½c per thousand cubic feet to be shipped to areas having a 2,000-year reserve supply of coal.

Again, the people of Texas want to make any sacrifice that is necessary for the winning of the war, but sacrifices of all areas should be in proportion. And certainly no sacrifice should be imposed in such a way that, while draining our resources, it at the same time cripples our newly found industries.

In wartime, materials must be secured from wherever possible. Had it been *necessary* to completely deplete Texas of its supply of natural gas to save the entire nation, that undoubtedly would have been done. For the same reason the Northwest might have been denuded of timber, the Great Plains stripped of cattle, the Mesabi Range emptied of iron ore. Livestock are a recurring resource, and unless a species is forced into extinction, it will multiply and again populate the land. Not so with natural gas; not so with iron ore.

We have been a nation wasteful of resources. Texas has not hesitated to burn billions of cubic feet of natural gas in the furnaces of its industry and to heat the homes and public buildings. Certain advantages of gas over solid fuels cannot be denied, yet, in the long run, and if a nation survives it must not falter in the long run, might it not have been wise for Texas to have hoarded its natural gas for purposes of greatest importance and to have used coal, electricity or wood where it could successfully supplement the gas and prolong the period of gas availability?

With Goods and Services For All

Central and West Texas have no wood to burn. Nowhere in Texas are there commercial deposits of coal. The potentialities of hydro-electric power development are not at all limitless. Then cannot Texas dissipate its own resources if it wishes? Being its own resource, can't Texas deny other States a share in the dissipation?

Possibly, but how does the situation look from the national viewpoint? The nation does not want to ruin Texas by draining its natural gas and then leaving it without a source of extraneous energy. Texas is willing to sacrifice for the destruction of the

enemy in time of war but not, of course, to follow a policy leading to self-destruction.

There needs to be an answer now in the very near future. We Americans like to think we know all the answers. Sometimes we do. Technocracy has the answer to the Texas dilemma pointed out by the editor of the *Dallas Morning News*. The same answer is just as applicable to the energy problems of other parts of the nation.

The answer is a nationwide, eventually a Continent-wide, energy transportation system. Coal would not necessarily, nor even probably, be transported to Texas, but the energy of coal would, by wire. A Continental electric power grid would be installed to distribute power to any part of the nation as needed. It would draw from energy sources, coal, hydro, gas, waste products, or what have you, in whatever manner would provide the desired results. One of the results would, of course, be proper conservation of non-replaceable and non-recurring resources.

A Continental power grid has already been designed by American engineers. The specifications can be examined in any Section Headquarters of Technocracy. Its execution awaits only the realization of the American people that our land will not flow milk and honey in perpetuity, without our directed help.

The largest state in our Union has expressed deep concern over its resources. It is time all America not only expressed concern but started constructive action. Wake up, America! Investigate Technocracy, and you investigate the future of your own great nation.

'He that will not apply new remedies must expect new evils.'—Sir Francis Bacon, 1561-1626.

A Serviceman's Diatribe

It Seems There Is More Than Politics Wrong With the U. S.

By A. A. Imbermen

Reprinted from the *Chicago Daily News*, March 4, 1944

By dint of a special invitation from Mary Frances Mears, this reporter managed to gain entrance to the Masonic Service Center on N. LaSalle St. Miss Mears, having read of this reporter's heroic attempts to get servicemen to talk about the 1944 presidential election outlook, suggested that the soldiers and sailors and marines who inhabit the Masonic Service Center were dying to tell someone about their political leanings.

It was fairly early in the evening when this inquiring newspaperman made his grand entrance, but nobody seemed to care. In one corner sat a solitary soldier, reading *Newsweek* magazine—obviously a man interested in current events. This reporter steered a straight course for him.

After disabusing the soldier of the notion that dirty pictures were being peddled to him, we got down to cases. What did he think of Roosevelt vs. Wilkie or Dewey?

The soldier stared hard at this reporter. 'Say,' he said finally, 'are you the fellow interviewing servicemen about the 1944 elections and getting every answer but the one you want?' Without waiting for a reply he plunged ahead. 'Well, what they told you two weeks ago is the bunk.'

'Howzat again?'

Only One State

'I said,' he repeatedly irritably, 'that whatever servicemen told you there were 48 states, it's the bunk. I've been in the Army three years,' he said as he leaned back in the easy chair, 'and I've been stationed in practically every part of the country, and

I've discovered there's only one state in the Union, not 48.'

'One state, eh?' echoed this reporter, ready for any kind of madness. 'What is it?'

'It's a combination of New York City and Hollywood,' the other replied bitterly. 'I tell you I never realized it until I got into the Army and saw the country. It's simply criminal.'

'Just a second,' implored this reporter. 'Before I think you're really nuts and not just apparently nuts, what are you talking about one state being a combination of New York and Hollywood?'

The soldier clenched his teeth. 'Listen, it's this way,' he said finally with a forced patience. 'Two weeks ago you had a bunch of soldiers tell you what a wonderful place Oregon is and South Dakota and what all else. You wrote it up and they had it pasted up on a bulletin board in one of the recreation centers. But what I'm trying to tell you is that it ain't so.' He was very emphatic. 'There may be 48 geographic division called states, but culturally all of them are nothing but 10th-rate imitations of New York and Hollywood. And I object, see?' He stuck his face forward and this reporter leaned back warily.

'Just what do you mean?' this Chicagoan asked.

The Movie Influence

The soldier sighed grimly. 'I was stationed at Fayetteville, N. C.,' he began slowly, 'and what did I find? Now how much of the South was there? Nothing. Not a hootin' thing. They tune in on Hollywood's Radio

Theater of the Air every night, put in a brisk session with the New York newscasters, go off to a Hollywood movie all about some horrible outpost of civilization called Brooklyn and then they go home and crawl in bed.'

This reporter listened, still wary.

'Then I was stationed at Fort Des Moines in Iowa,' the soldier continued. 'I visited at the state college at Ames. One night I went to a sing by some students. What did they sing?' he demanded rhetorically. 'What did they sing?' he repeated. 'A lot of tripe written in New York's Tin Pan Alley that was as phony as a tin ear. I found the same thing in Texas.' He leaned forward intently. 'Do you think they'd ever sing a native country ballad? Of course not,' he snorted. 'All they knew was some New York or Hollywood ditty about that old black magic that's tootled over the radio day and night.'

This reporter tried to interrupt now, to disengage the engagement, to flee, but nothing doing.

Nobody Knew Joe

'I was down in southern Illinois,' the soldier went on like an Ancient Mariner, 'hunting for some relics or trace of Joseph Smith the Mormon leader. Would you believe it,' he shouted in an angry voice, 'nobody in the section ever heard of Joseph Smith, they didn't give a hoot what he did in Illinois. All they knew was that Don Ameche didn't play in that picture. But out in Utah they know all about Brigham Young. And you know what they know?'

This reporter shook his head vaguely.

'They know a trumped-up, prettified story that Hollywood put on the screen a few years ago.' His indignation swelled. 'They get their history from the New York smart alecks who are imported into California to rewrite

the country's folklore. I tell you it's criminal!'

There was a moment's silence, and this reporter began making definite plans to escape.

'And what's more,' the soldier raged, 'they catch 'em young as well as old. They stuff the oldsters' ears with the blah on the radio from New York and fill him up with animated flickers made in Hollywood by unnaturalized New Yorkers, and what'd they do with the young ones?' he stormed. Before this reporter could answer, the soldier was off again. 'They catch them young by editing their school books. All the book publishers are in New York, too,' he added with a grim smile, 'and what they say goes, even down in Louisiana. Why, I was there two years ago, and had a date with a teacher. It was out in the bayou part of the state and she was some sort of French gal, and at her house I saw the books her kids use. Do you know what was in them?'

This reporter was too bewildered to reply.

Blasts School Texts

'I opened up this here reader,' the soldier said as he turned the imaginary pages with his hand, 'and there was a sentence like this—Food is delivered by freight cars to the city's doors, and then through the wholesalers and retailers to the people who consume it. Think of it—Food is delivered by freight cars to the city's doors—telling that to Louisiana bayou children just because New York publishers publish textbooks for New York kids. Why, those Louisiana kids never see a freight car from one year to the next, and just about all their food is home grown. Except coffee,' he added.

He paused for breath and then roared again. 'Another thing'—he was red-hot by this time, 'look at your novels. When I was in New York,

if a new book got a kiss of death from a New York reviewer, it was a dead duck. If it got a good notice, the publishers turned handsprings. They don't give a hoot what kind of a notice it gets anywhere else, good, bad or anything else. They publish their novels with an eye to the New York trade, and the rest of the country can just as well lump it.'

This reporter was now calculating the distance to the front door.

Chicago On The Pan

'And what about music?' the soldier roared anew. 'I've been in Chicago about eight months now, and every concert here is booked into Chicago by New York booking agents whose first cousins work the Hollywood end of the racket, and to get a play a Chicago manager has to go on his knees to the New York producers. As for opera, the blue-bloods here won't support anything unless it's got the blessings of the Metropolitan Opera Company moguls, while Mrs. Van Astor or what-the-ever her name is, works the yokels over the radio for the cold cash to keep the joint operating.'

This reporter was definitely making plans to run for it, when the soldier leaned over and grabbed his coat lapel. 'And finally,' he practically shouted, 'what about the newspapers all over the country filled with gush

about what Mrs. Renssalaer said to Mr. Goldblitz at the Stork Club and who bashed who at the El Morocco? What is that nonsense doing in local newspapers? Isn't it the same stuff that's peddled through every other channel of communication?'

This reporter wiped his forehead, anxiously awaiting the next outburst, but apparently the soldier had shot his bolt. He sat there breathing heavily, staring ahead, daring anyone within earshot to object to a single word. Finally, to close the interview, the soldier was asked his name and address.

'James Peary,' he said, 'from New York City.'

'New York City!'

'Yes,' replied the soldier. 'I never lived away from home before I joined the Army and got to traveling with the quartermaster corps, but by golly, I sure learned to hate New York once I found what it did to the rest of the country.'

'Want to say anything about Roosevelt vs. Wilkie or Dewey?' asked this reporter, rising.

'They're all New Yorkers, aren't they?' the soldier roared in reply, his face reddening again. 'And what's more. . . .'

By that time this newspaperman was hotfooting it down the street, headed for a drugstore and a seltzer to relax the taut nerves.

Way Behind Schedule

A 'very large XB-35 "flying wing" now under construction at the company's plant at Hawthorne, California, can be adapted as a transport plane.' (La Motte T. Cohn, Chairman, Northrup Aircraft Inc. in *Wall Street Journal*, September 12, 1945).

'At the present time our technology has outgrown our social system; the great forces of the Power Age are straining within the confines of institutions that were fashioned in stage coach days.'—Leslie A. White, Professor of Anthropology at the University of Michigan.

I Am Futility

By Roger Elgood

I AM the manifold results of frustrated attempts to accomplish the physically impossible, in spite of the aid of ignorance, faith, hope, crass stupidity and the supernatural.

I am the end product of APPLIED ignorance.

I am all and every attempt to distribute abundance with a Price.

I am indispensable to the act of attempting to defy a physical law.

I am all decisions arrived at as a matter of opinion, which could be determined as a matter of fact. I am political promises. I am the resultant arrived at by suppressing the facts and lauding the false.

I am organized labor pursuing jobs that do not exist. I am a war hero remaining a hero when he demands a decent living and there is no job available. It is difficult to be a bum and a hero at one and the same time. I am the probability of Charity alleviating the need for charity in the slightest degree. The tendency is always toward perpetuating the need. I am individual independence, which died when the Power Age was born.

I am the hope of eliminating the neurotic tendencies of society in a neurotic social system (by leaving the mosquitoes their breeding ground, we do not stamp out yellow fever).

I am physical and mental wellbeing by denying the means to both, in spite of the availability of these means. In other words, I am the arrival of a physically and mentally superior man by dysgenic methods.

I am business, big or little, producing anything which cannot be sold at a profit. I am the small farmer and the man who is going into business for himself after the war. I am export

trade and foreign markets after the war.

I am a high standard of living on this Continent by the Price System method of exchanging the goods and services which actually constitute the standard of living. In the face of less and less man-hours, I am a higher standard of living, now hostile destruction has ceased.

I am modern business discarding the process of 'a conscientious withdrawal effort' when markets become flooded. I am the sale of any specific abundance to a consumer population with the capacity to use, but without the price. I am a 'price' on the air we breathe.

I am our 'immutable rules of conduct, enforced under progressively changing conditions, logically resulting in anything but a muddle.' (Thorstein Veblen)

I am the physical and mental impossibility of ever stamping out or changing in any Price System those behaviour patterns known as the 'main chance' or 'looking out for number one.' Veblen's terse explanation of these traits is unique. He states: 'By steady habituation, cupidity and sharp practice have been embedded in the common sense of the people as *civic virtues* of the first order, under the decent camouflage of thrift and self-help.'

Yes, I am self-help, by chicanery and subterfuge, resulting in the four freedoms and business as usual at one and the same time. I am the approach to approximate truth (scientific fact) in the business of life from any point of view but the scientific; also I am any compromise with 'the determination of the next most probable result' in that vast field of research which is

today THE most important factor of the means whereby modern man lives.

I am the application of the Golden Rule and business 'ethics' simultaneously.

I am the solution of America's problem of abundance, by Russia's method of solving a problem of scarcity. I am Europe solving American economic problems, or vice versa. I am that corny solution to America's problem of abundance, 'Buckle up your belt and go back to 1880.'

I am peace, by violence.

I am a cargo of gold on an unprovisioned ship a thousand miles from land; no sails, food or fresh water, only a full crew of men. There, I am puerile as well as futile.

I am the end of the tether of opinionated wishful thinking.

I am sly. I keep man in misery; he woos me, loves me and wins me; then pities and excuses himself and hates me because I give him what he asked for. This goes on perpetually; poor me, I am so misunderstood.

I retard all progress, as my social status is equal to that of complete stagnation. Oh, yes, I have even been on sprees with 'retrogression' IN AN EMERGENCY.

I slyly entice both the informed and uninformed with countless opinions by

my seeming obscurity, and I howl with delight when I perceive clarity so often deliberately made opaque by an ulterior implication. This, of course, serves both the ignorant and the stupid, and still I gull them all.

The fact is, gullibility is my meat, I thrive on it. I devour it and belch back the masticated and now putrid mess of opinions in the faces of my prey; the embodiment of nothingness, futility.

(Sotto voce): I don't like these engineers and scientists. They high-hat me, every time I make advances toward them, and sabotage all my efforts to slow them down. They lack entirely that serene and cocksure mien so admirable in politicians. I always loved that masterly attitude of Government executives, as though they were chanting: 'I don't know what I'm doing, but I do it anyway.' Yes, I'll stick by those boys; I don't approve of the silly engineering viewpoint of never trying to do what you know can't be done. 'Obvious' is just an excuse for laziness. Everything should be tried once, even suicide. The unerring righteousness of being entitled to your own opinion, or that of one you have adopted is the Mandate of . . .

Yours truly,

FUTILITY.

Birds of a Feather

The cultural retrogression of the Middle Ages in Europe, which made the situation prevailing in many medieval communities approximate in some respects that of primitive societies, was not conducive to innovation, least of all in the field of Technology. The hierarchic social stratification that was sanctioned as divinely ordained by the Church, which spiritualized poverty and denounced materialism and experimentation, created an economic setting and authoritarian attitudes fatal to scientific progress and technological

change.'—*Technological Trends and National Policy*, page 62, a report of the National Resources Committee, 1937.

'Bankers regard research as most dangerous and a thing that makes banking hazardous, due to the rapid changes it brings about in industry.—Charles F. Kettering, vice president and director of research of General Motors Corporation in an address before the Association of National Advertisers in Detroit, May 9, 1927.

When You Come Back

G.I. Joe, The Business Man

By Pvt. Clyde Wilson

(Reprinted from *Technocratic America*, November 1945)

A Peanut Stand And A Whistle

G. I. JOE is going into business. Why not? Success is his for the asking. All he has to do is get a government loan, work hard, and the rest will take care of itself. At least the line is something like this: 'Yes, Joe, you are to be your own boss. What more could you ask for?'

Of course, it will take some time before Joe will build his pencil or apple business into, say, Fords, General Motors, or General Electric. Maybe Joe is not shooting for the stars. A spot on the corner of Main Street would do. 'Joe, you are just the new blood needed to build the up-and-coming town into a metropolis.' Success is Joe's just for filling out the papers for a loan provided to him under the G.I. Bill of Rights.

But just a minute, Joe, don't you smell a rat somewhere? Yes, you fought and gave your all while pressure groups at home fought for a p-i-e-c-e of the profits, with services from none. Sure, you are entitled to the best. These same pressure groups are willing to give you something (for nothing?) after your discharge, while before and during the war they couldn't give their all for the war effort, as you did. These pressure groups have always put vested interest first; they care not for you nor a positive transition into peace. Now, these interests make claims on you. You are their friend in need. 'What a load you have been carrying, Joe.'

Maybe we got off the subject, Joe, and maybe not. Let's get back to this loan, if you are still interested. In brief, the government will allow you

\$2,000, or fifty percent of the total amount. This debt must be used to purchase a home, business property, a farm or farm equipment. You must show that you have the ability and experience, in an endeavor which promises (can you see it?) success. The debt creators can't lose, or can they? They even have a word for you, Joe. It goes like this: 'We greet you—you have been a success over there—in this time you have lost your value—to show you our hearts are in the right place, we are going to watch over you, to see that you get off on the right track—we are your friends.' It's three cheers for them, Joe, not for you; if cheers mean anything.

Before you make the high dive, Joe, let us consider a few facts. It takes about ten to twelve thousand dollars to get started in a modern up-to-date, small business. This investment in no way assures you of a profitable business. You must create debt faster than the next fellow or you will soon go out of business. And going out of business is just what is happening.

There's Always Room at the Top

The facts regarding business trends are:

1. Business was in either have a war or die situation before the war. With its lend-lease, the war gave business enterprise artificial respiration. Business has no way to go, now that the war is over and 'conversion' is on the way. An epidemic has started, Joe, and it isn't a good omen for any G.I. going into business.

2. Places of business are becoming fewer, and smaller in space; while pro-

duction increases, then levels off, and then dips.

3. New frontiers are few and far between. Monopolies, cartels and capital markets are ready to squeeze you into oblivion even before you get started. Little business shrinks relatively as big business grows.

What about the farm? According to the farm census of 1940, more than half of all farmers in the United States had a gross income under \$1,000. In the period of 1930-37, there were about 3,500,000 transfers of title to farms, about 1,500,000 of which were due to foreclosures, forced sale, bankruptcy, or tax sale. As a result of new machinery and better methods, the average production per farm worker in 1930 was 150 percent higher than in 1870. It is estimated that the normal requirements in farm production can now be met with 1,600,000 fewer workers on farms than in 1929. In the five Corn Belt States there were an estimated 25,000 tenant farm families, unable to find farms to operate during the 1940 crop year because of expansion of farm operations and increase in the size of farms due to improved equipment and mechanization.

Technology is the reason business enterprise is becoming obsolete. Busi-

ness is forced to use new machinery to decrease the energy cost and to increase productivity. This in turn decreases the man-hours, thus purchasing power becomes less and less. As purchasing power decreases, it is obvious what happens to business enterprise.

There are other trends to take into consideration, but they all add up to the same thing, the impact of technology upon the Price System.

You can do something about this, Joe. Not by being a sucker to the debt creators, but by being a part of the organization which will promote you into a chiseler through the easiest and surest way, i.e., science applied to the social order. The only way to be in accord with the technological trends is through technological methods. We on this North American Continent have the resources, the minerals, the equipment, and the skill to unite and operate a society of abundance for *all*. Why allow some chiseler to disillusion you into hitting your head against a brick wall? Why not go for the whole loaf, instead of the crumbs? Why not recognize the inevitable, the scientific approach to our problem?

Don't take our word for it—investigate Technocracy, and do it now. Time is Short.

We Have the Men

'It is the theory of capitalist enterprise that the use of private initiative and the assumption of risks, is the justification for private ownership and private property. But construction of government plants involved no elements of private capitalist enterprise; no private initiative, investment and risks, no production and competition for markets, sales and profit, since government provided the initiative and investment and an unlimited market, sales and profit. War plants are the creation

of public initiative and enterprise, the investment of public money. They are now leased to private corporations; but they are operated neither by owner-managers (in the overwhelming majority of cases) nor by the absentee stockholders, they are operated by technical-managerial personnel on a salary basis, and this personnel can do the same job in public enterprises.'—Lewis Cory of Antioch College in a talk at a conference of People's Lobby, Inc., Washington, D. C., Jan. 27, 1945.

Free Enterprise? Don't Make Me Laugh!

Three Examples and a Conclusion

By Chas. Hockenbrouch and Harley Merrick

'Them Was the Good Old days' by Charles Hockenbrouch

IN this land, our particular Price System is referred to as the system of 'free enterprise.' These days we hear that phrase quoted from all directions. What makes this system so desirable? Let us look it over. We are told that America has become great because of free enterprise. We lead the world in various forms of wealth, such as automobiles, telephones, railroads and numerous other things. We lead the world in production and technology. We also had 12 years of hard times, which is passed off lightly as a mere 'depression' on the road to prosperity. What is meant by 'free enterprise'?

Let me give you an example from the City of Cleveland, Ohio. Some years ago, around the time of the gay 90's, a man named Humphrey made candied popcorn balls and taffy. He would pack them in a big basket, suspend it from his shoulder and sell it on the streets around our 'public square.' The cost was small and the profit large, so later he was able to open a store on the corner of the 'square' and thus do a bigger business, the energy of peddling goods going into making and selling more from his stand. Soon he was hiring people to do the work, and his income increased to the point where he opened the world-renowned 'Euclid Beach' Park. From these profits an ice rink known as the 'Elysium' was built. Here is a real example of what was known as 'free enterprise,' starting from a popcorn ball and finishing as a millionaire.

Born 50 Years Too Late!

Are things done this way now? Some people would be interested in having you think so. Let me give you an example of modern, up-to-date 'free enterprise.' During our 'depression' we had relief and WPA. Bakery wagons came to the WPA projects and sold small pies for 5 cents each. To one of these projects came a man, about 60 to 70 years of age. His wife made small pies which the man sold for 10 cents each. Being highly superior pies, this man began to squeeze out the baker. The baker reported this to the authorities, and there were no more good pies. To go into the bakery business, you must, first of all, rent a storeroom. You are not permitted to make food products in the home and sell them. You must get electricity, gas, water, a stove, and after you've gotten all of those things, then you must have the permission of an inspector before you can start. If the inspector for any reason refuses an O.K., your investment is shot. If he O.K.'s it, you'll have to pick up a lot of business in a hurry, or quit. Some expensive shoestring!

In Lakewood, a suburb of Cleveland, Ohio, there was an entirely different example of modern 'free enterprise.' A grocery company instituted a home service, with trucks stocked with groceries going from house to house. This was a convenience to the housewife, but at once a terrific howl was raised. What about the empty store rooms of the good taxpayers?

How would they run the city without taxes, etc.? The result was that the Council outlawed the trucks. This is probably what is meant by 'survival of the fittest.'

From these examples it would seem that 'free enterprise' means starting a business and then building a stone wall around it. The 'good old days' when every one could be a millionaire (but wasn't) are gone. Peace be to its ashes!

Conclusion by Harley Merrick

We hear a great deal about 'free enterprise' and I'm wondering why it is necessary to take so much trouble to advertise anything obviously as good as its proponents say. Are the American people so ignorant or blind to anything so sound as 'free enterprise,' or are they being sold on the idea because it is good for them or is it because some who do not wish to reveal their identity expect to profit by it?

When we consider who wants to maintain the status quo, we must remember a few things relating to their case. Why did they not say something about 'free enterprise' back in the 'good old days' of installment buying, and the 'buy, buy campaign' and in the 'Stock Market Crash' with the depression that followed and continued so long? Why didn't they use the 'free enterprise' system to bring an end to the depression instead of leaving it up to the Government? Why don't they tell us all the facts about the 'prosperity' 40 percent of us enjoyed during the war at the expense of the majority 60 percent? This is bound to act like a boomerang and come right back to us in a more vicious depression than we have ever known, but we are not told that. When we hear a lot of bellowing, it is a good time to 'Stop, Look and Listen' and

see if we can tell whose ox is being gored.

Why is it that the 'Free Enterprise' boys would not turn a tap in production for defense until the Government stepped in and guaranteed a 12 percent profit on all war production? Eight percent was not enough. Why didn't 'free enterprise' exercise its freedom to raise the \$25 billion for plant and other expansion needed as war facilities? Now that the war is over, to whom will these plants belong, our Government or the profit boys who asked the rest of us to put the 'pay' in patriotism with blood, money and sacrifice, while they risked comparatively nothing?

Just consider who had an army of dollar-a-year men in various departments of our government and for whose benefit they were working. Also consider the number of otherwise capable business men who could not make a success of their jobs for the Government at salaries six to ten thousand dollars, and yet have gone into private business at many times that salary.

As a nation we could not exist half slave and half free. Neither can we continue to progress partly Government-operated and the balance by private 'free enterprise' only when it is guaranteed a profit without taking too much risk.

True to His Flag

'A man loves his country. He makes laws for the glory of his flag. He traces the outline of a national ideal he would like to live up to, but his stomach, his needs for trade, are essentially international. He is a patriot, and a sincere one, but when his money is concerned, he blissfully commits treason.' The late Charles E. Bedaux, industrial-efficiency expert and collaborationist, quoted by Janet Flanner in the New Yorker. (P.M. October 21, 1945.)

From Here On Out

Keep Your Eye On The Trends

By R. F. Novalis

Politicians may promise—
Philosophers may wish—
Liberals may believe—
Dictators may rave—
Economists may guess—
BUT
TECHNOCRACY has to know!

Sources of Data:

THE story is told of a statistician who used to open his lectures with the startling statistic that 50 percent of the teetotalers in a regiment in India the year before had died; then he would nonchalantly explain to his horrified audience that there were only two teetotalers anyway, and one was eaten by a tiger!

Most Price System so-called 'statistics' are similarly scattered and 'selected' for the sole purpose of confusing any one who wants to get at the facts of life on this Continent.

The so-called 'indicators' of business trends prepared by and relied upon by Price System economists are either:

- (a) Irrelevant and obsolete;
- (b) incomplete, by leaving out necessary data (example quoted above); or
- (c) loaded, by 'weighting' and 'adjusting' to cover up actual trends.

For example, one of the main 'barometers' of industrial trends, according to the economists, is railroad carloadings. The figures are printed in your paper every week. But they lose their significance when it is realized that one carload may contain 10 tons of freight and the next one 25 tons. Monthly

ton-miles of freight carried are more accurate.

Starting with this issue, the *Great Lakes Technocrat* will keep track of the blows technology gives the Price System in the United States, with a running survey. We will use as source-material the mass of detailed and individually reliable statistics published in the *Monthly Survey of Current Business* of the Department of Commerce, the *Monthly Labor Review* of the Bureau of Labor Statistics, and the *Monthly Bulletin* of the Federal Reserve Board. The necessary correlation into significant trends will be done by the Research Committee of Section 1, R. D. 8741.

None of this data (except unemployment) is printed in any Price System publication as it is here, because when you combine certain statistics which separately appear 'favorable,' they frequently provide good evidence of Price System disintegration. All the basic data, of course, is derived from Price System sources, which makes the evidence self-incriminating.

This dynamic (i.e., cause-and-effect) interpretation of data in such terms as 'man-hours per unit,' introduced by *Technocracy* originally back in 1932 and 1933, provides the most accurate method of determining what is happening and going to happen on this Continent.

Increasing Trends

Debt. Total Federal debt is given in terms of per capita dollars *you owe*, so that it can be compared to what your great-great grandfather owed, say. Owed to whom, is the question. Contrary to what some economists and politicians claim, we do not owe it to 'each other.' For example, approximately 11 percent of the U. S. Treasury's outstanding debt is held by just 13 private corporations, comprising 4 insurance companies and 9 banks. This amounts to \$25,716,000,000, which is greater than the total Federal debt in *any* year prior to 1934. As long as you're so curious, here they are, starting with the largest debt-holder:

Prudential Insurance Company
Chase National Bank
Metropolitan Life Insurance
Bank of America
City National Bank
Guaranty Trust Company
New York Life Insurance Co.
Continental Illinois Bank
Equitable Insurance Company
First National Bank of Chicago
Manufacturers Trust Company
Central Hanover Bank
Bankers Trust Co.

Note: Grand total U. S. debt, both public and private, is not kept up-to-date monthly, so we use only the Federal government's debt. Anyway, as Howard Scott, Director-in-Chief of *Technocracy Inc.*, predicted as far back as July, 1935:

The liquidity of all financial institutions will tend to increase toward 100 percent, while inversely the rate of interest will tend to decline simultaneously toward zero. These trends . . . result in *compelling the government to take over the prerogative of debt creation from private*

corporate enterprise, in order to create sufficient debt to save the existing debt structure . . . *Technocracy*, Magazine, A-2.

Since then, public debt has yearly become a greater proportion of the total debt, and by 1943 was greater than private debt, for the first time. Last official estimate of the grand total debt was \$338 billions, as quoted in the *Great Lakes Technocrat*, No. 71.

Enforced Leisure: The all time low in unemployment since the turn of the century has already been reached, 630,000 in October 1944. Two months later it was up only 50,000. Four months later it was up over 200,000. The all-time high was reported by the Russell Sage Foundation in November, 1933 — 21,000,000 persons unemployed. Current data is by the U. S. Bureau of Census.

It must be emphasized that there need be no relationship between a diminution in the total amount of necessary human labor, and of unemployment. The former is a direct consequence of technological advance; the latter results solely from human stupidity.— M. King Hubbert, in an editorial, *Technocracy Magazine* A-5, December 1935.

Machine Tools: Earliest accurate estimate of the number of machine tools in use in American industry was made in 1925 by the *American Machinist* magazine. Current production is added to the 1,711,100 total reported to be in use in January 1945 by the latest survey of the same publication.

Government Bonds: The ratio of government to total bond investments by our banks* and insurance companies** is a gauge of the confidence of private enterprise in itself; the less

*Source: Federal Reserve Board.

**Source: Life Insurance Association of America.

secure they feel, the more Treasury bonds they buy. Unfortunately for their financial standing, however, the interest rate on these bonds is less than that of corporate investments. Thus the crutch of Federal Government bond investments lengthens as the Price System's overall stability weakens.

Declining Trends

Production: The Federal Reserve Board's monthly estimates of industrial production, the only such indexes available, are a measure of *physical* factory output only to the extent of 42 percent (see Federal Reserve Bulletin, October 1943), while man-hours are used for 58 percent of the index! Inasmuch as *total man-hours* have been on the decline since their all-time peak around November 1943, and *man-hours per unit* have been going steadily downward since James Watt came out of his shop with a condenser for the steam engine (before 1800), the Board's economists are Dr. Jekyll and Mr. Hyding it by attempting to tie America's industrial progress to a factor which is now permanently heading *down*, regardless of whether production might increase for a short time. Perhaps you recall the late Stephen Leacock's character who 'jumped on a horse and rode off in all directions. . . .'

Incidentally, don't let the name 'Federal Reserve Board' lead you to the conclusion that it is a branch of the U. S. Government. It is actually a private bankers' organization. However, until we can work out a more accurate index, we shall be forced to make use of the FRB index of factory and mine production, in connection with the man-hours per unit estimate. Only 'unadjusted' index figures will be used.

Man-Hours Worked: The 1919-1920 monthly average total of factory, railroad and mining industry

man-hours was 2,540,000,000. We are now back down from the all-time peak (reached two years ago) toward that level of a quarter-century ago, and we will work even fewer man-hours as time goes on. This curve approximates the trend of net purchasing power the main support of Price System operating stability.

Man-Hours Per Unit: The number of man-hours required to produce one pair of shoes, or other commodity, a ton of coal or other mineral, a bushel of wheat or other crop, is now less than 16 percent of the average of what it was at the time the steam engine was introduced (before 1800), and under 40 percent of the 1919-1920 level.

Enforced Scarcity, i.e., Low Load Factors: Capacity estimates for a dozen important industries are used for this figure, but not the estimates of 'rated' capacity given by trade associations which are based merely on maximum profitable Price System operations. For the technological definition of balanced-load capacity operation, see pages 16 and 17 in the article 'America Prepares for a Turn in the Road,' by Howard Scott in *Technocracy Magazine* A-1. The most reliable method of determining what would be the 24-hour, 365-day maximum, theoretical 100 percent capacity of any industry, is by averaging the load factor on the electric motors used by that industry in the last Census year, 1939. This provides a close approximation of the load factor on the installed equipment, as electric motors are employed to drive practically all machines used in factories. If the flour mills of the nation produced 106,000,000 barrels of flour in 1939, but their motors were operated at a load factor of only .24 (as was actually the case), then the theoretical capacity was 440,000,000 barrels per year, or 36,600,000 per month. The mills

claimed their monthly capacity was 14,350,000 barrels.

Flour milling capacity having changed but little in the past five years, the average of 10,371,000 barrels milled in November-December 1944 thus amounted to but 36 percent of actual capacity. The same procedure was used in figuring the capacity of 11 other industries, plus mine smelter output, in some cases altering capacity estimates in accord with newly published changes since 1939. Railroad load factor is based on ton-miles carried in relation to the capacity of freight cars, and to the averaged speed freight trains actually moved in the months covered.

Of course, .95 is the practical (engineering) maximum load factor for any plant or industry, but that efficiency and correspondingly high living standard must await the arrival of Continental physical planning, which requires technological control exclusively, which means a *Technocracy*.

The Price System view of capacity was well summed up in October 1944 by Merryle Stanley Rukeyser in the

Chicago Herald-American:

As for 'capacity operation' of industry, it would be disastrous as a permanent policy. Industry needs some slack for maintenance and repairs, for fluctuation into temporary peaks, and for the rhythm of progress.

The word 'slack' used by this economist refers to the normal average of operations, which is near 5 percent of capacity. His 'rhythm of progress' would be Exhibit A for a student of semantics, for actually it signifies the Price System's 'prosperity and depression cycle.' It is during the depression period that business, helpless to control itself, is 'forced' to lower the ratio of production to capacity.

Interest Rates: Sources—Survey of

Current Business. Significance (see 'Debt').

Oscillation downward: As the peak of wartime production was reached in November, 1943, (and it will turn out to be the Price System's all-time industrial peak), the amount that factory output has fallen since that high point indicates the oscillation, perhaps the start of the last major one, into which the Price system is leading us.

History Never Repeats

The 'cycle' theory flew out the door when the steam engine, first large-scale practical converter of extraneous energy, was invented, but the economists still refer to current events in terms of cycles. See *This Week Magazine*, April 7, 1945. An examination of long-time trends in any basic American industry makes it obvious that this 'rhythm' is rapidly turning into the 'jitters.' Take pig iron, the basis for steel, which in turn is the basis of America's technological civilization and living standards.

The 1893-94 depression dropped pig iron output a mere 27 percent, although it was the worst the nation had ever experienced. In 1907-8 the next depression brought production down 38 percent, which in the 1920-21 postwar depression increased to a fall of 57 percent from peak to trough. In the last great depression, 1929-33, it fell 79 percent. In other words, each time production oscillates deeper, and toward a complete shutdown. We're on our way now toward the end of the Price System.

All 'latest' figures cover the latest two-month period for which data covering all series has been published. Some of the statistics are available only a week late, such as steel and electricity production, debt, etc. Although technological necessity has caused a slight speed-up in the collection of industry statistics, most are

still over a month late. An extreme example is the Bureau of Mines' annual report on total extraneous energy consumption in the United States, which is published nine months after the year is ended.

Averages for two-month periods are used, instead of single month figures, as this smooths out minor monthly ups and downs which would tend to distort the trend picture.

Furthermore, production and certain other indices here have been reduced to the monthly averages for the two years 1919-1920 as a 100 percent basis, simply because those years happen to mark the turning point in America's social and technological history. Economists, historians and other Price System interpreters still describe our chronology in terms of the year of

'such and such a politician was elected president,' 'this battle or that,' 'depression and prosperity' years, etc. As a matter of fact, some time during 1919-1920, these three curves (see basic chart, copyrighted by Technocracy Inc. in the *Technocracy Study Course*, or on display at any Section headquarters)—

- (1) Man-hours per unit,
- (2) Total man-hours worked, and
- (3) Industrial production

crossed; for the first time in human history.

This page will measure, by close approximation, some indications of the trend toward the final collapse of the Price System on this Continent, from here on out.

Technology's Impact on the Price System in the United States

Increasing Trends		All-Time LOW	Latest HIGH Figures*
1. DEBT (U. S. Govt.) per person.....	January 1, 1840—21c		\$1,875.00
2. ENFORCED LEISURE (unemployment).....	October 1944—630,000		890,000
3. MACHINE TOOLS in use** (cumulative total).....	1925	700,000	1,776,500
4. BANK LIQUIDITY (percent deposits to reserves, Federal Reserve Banks).....	1921	60.0%	95.15%
5. GOVT. (U. S.) BONDS to total bank invest- ments (Federal Reserve Banks).....	1929	39.0%	93.30%
6. GOVT. (U. S.) BONDS to total life insurance investments	1915	.0005%	60.00%
Decreasing Trends		All-Time HIGH	Latest LOW Figures*
1. PRODUCTION (combined factory-mine-railroad freight) Index basis 1919-20 monthly aver- ages equal 100.....	Oct.-Nov. 1943—250		224
2. MAN-HOURS WORKED (total of man-hours in factory-mine-railroad) (Note: 1919-20 month- ly average was 2.54 billion) Actual number	Oct.-Nov. 1943 3.14 billion		2.53 billion
3. MAN-HOURS PER UNIT in above industries, combined average.....	1919-20 monthly averages equal 100		39%
4. ENFORCED SCARCITY (load factor on installed capacity of above industries).....			25%
5. INTEREST RATES (combined average yield on Govt.-municipal-corporate bonds).....	1919-20	6.12%	1.80%
6. OSCILLATION DOWNWARD of factory output since all-time peak (Oct.-Nov. 1943).....			40% drop

**No figures available on number of machine tools scrapped.

*July-August 1945; two-month averages for latest period, all data is available.

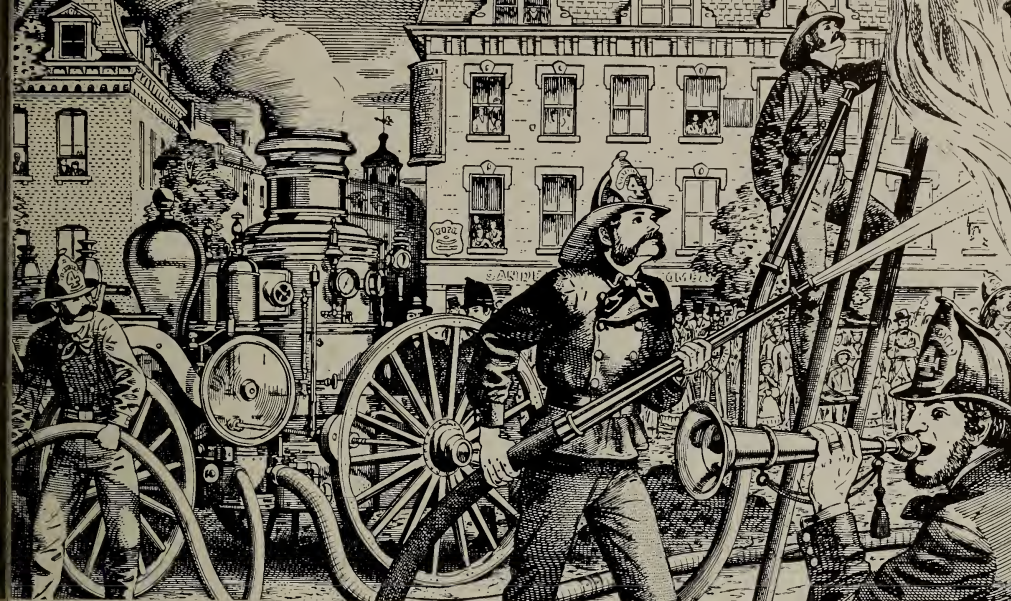


Photo: Courtesy Bristol Brass Corporation

Remember the old horse-drawn steam pumper with polished brass upright boiler, the hook and ladder truck and the Chief's trumpet? Those were the picturesque days of fire fighting. Efficiency was lower then, but the problem was simpler. Fire fighting techniques are much better today but the problem is tougher. Every minute in the U. S. about 500,000 matches are struck and \$800 worth of property goes up in smoke. Besides better technology more control is needed over factors causing fires.



Photo: Courtesy Clayton Manufacturing Company

Fire meets its master, Fire Fog. This is produced by dozens of needle fine streams under pressures up to 600 pounds. These are slanted to strike each other upon leaving the nozzle. Each gallon of water is broken up into millions of particles. Fire Fog cools off and smothers burning material with very little water damage. Besides Fire Fog we now have Mechanical Foam, Chemical Foam and Carbon Dioxide, or Snow. Fire hasn't got a chance if we apply control to all contributing factors.



Photo: Courtesy The National City Bank

'Iron men and wooden ships.' Whaling was an adventure then. Often the whale won, because there was little control. Not so today. The iron men are now technicians and the ships are power-driven processing plants. When sighted the whale is shot with an explosive harpoon and injected with compressed air to keep him afloat. A radio emitting recurring signals is attached to the carcass so the ship can locate it later. Oil, spermacetti, vitamins, leather, ambergris are products of whaling.



Photo: Courtesy Goodyear Rubber Company

Now comes the Marsh Buggy, the geophysicist's jeep. The wheels are air-tight aluminum drums. The tires are 10' high and $5\frac{1}{2}$ ' in diameter. Marsh Buggies transport men and equipment over swampy terrain in search of oil. They travel 4 mph. in water and 20 mph. on land. They're used in tidal areas of the Gulf Coast and in Central America. Here is an excellent example of how Technology obtains control over a set of difficult physical factors. Keep the thought in mind. We'll get to it again.



Photo: Courtesy Boston Woven Hose and Rubber Co.

World's largest piece of hose, 20' long and 3', 2" in diameter, weight 5 tons. It serves as a flexible joint on the suction end of a hydraulic dredge. In service 5 years, over 30,000,000 yards of Mississippi River mud has passed through it. This quantity of material equals the yardage in 10 Great Pyramids. The Men, Machines, Materiel and knowledge with which to deepen North America's rivers and build a Continental Hydrology System are already here. What is needed is control by Technology.

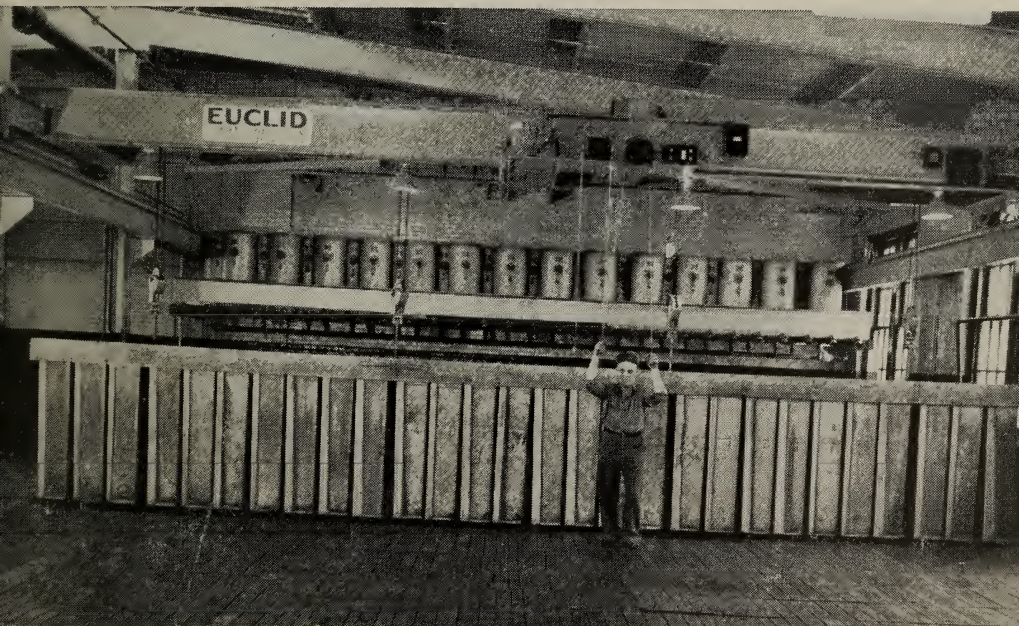


Photo: Courtesy Polar Ice and Fuel Co.

Here is control by Technology. It's a one-man ice plant producing 42 tons a day. Electric motors of 175 hp. capacity furnish power. The combination engineer-tank man keeps the machinery running, treats the water, freezes and harvests the ice. He lifts 28 cans of 300 lbs. each with a 2-motor crane. At night the plant operates unattended. No breakdowns have occurred in the first 6 months. The Company has 14 plants. By next Spring 3 will be semi-automatic. That's the real American Way.

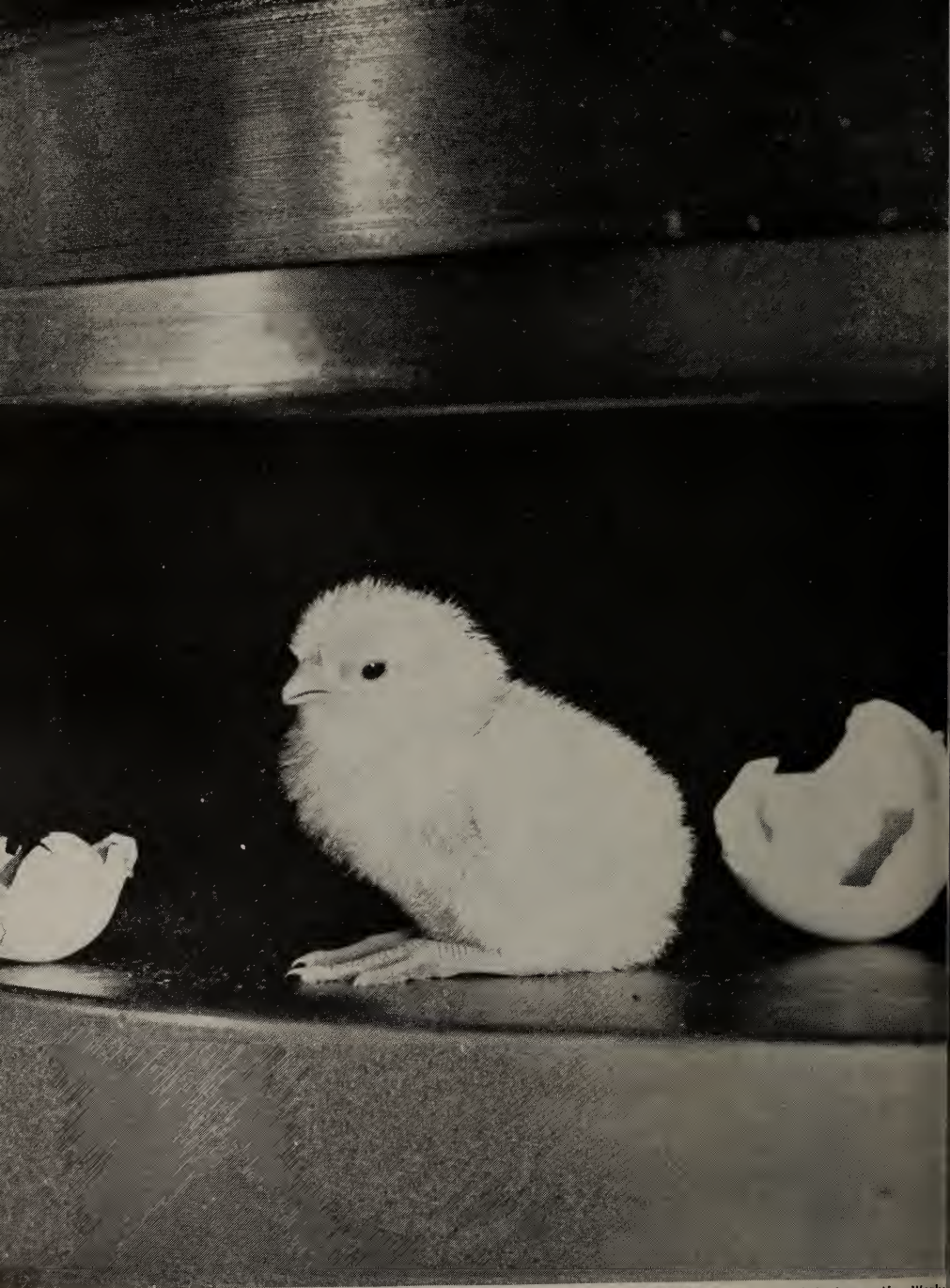


Photo: Courtesy The Baldwin Locomotive Works

Here is control to marvel at. This 3,000,000 lb. testing machine breaks the shell of a hatching egg and does not harm the chick. The same technological principles making this feat possible are capable of bringing our chaotic social system under precise control for the General Welfare. In view of the enormous forces released by modern Science and Technology we are all in the same helpless position as this baby chick, until we obtain control of those forces. It can be done. The design is ready.



Official Photo U. S. A. A. F.

Smoke rising from the atom bomb explosion at Hiroshima. The Price System is now playing around with the force that holds the earth together. If we don't get shut of this brainless system soon, the World may turn into a puff of smoke in the immensity of space. Philosophers, priests, politicians, warriors and business men are leading humanity straight into the hell of social fascism or total destruction, American Scientists and Engineers **AWAKE!** We, literally, have the world to lose now.

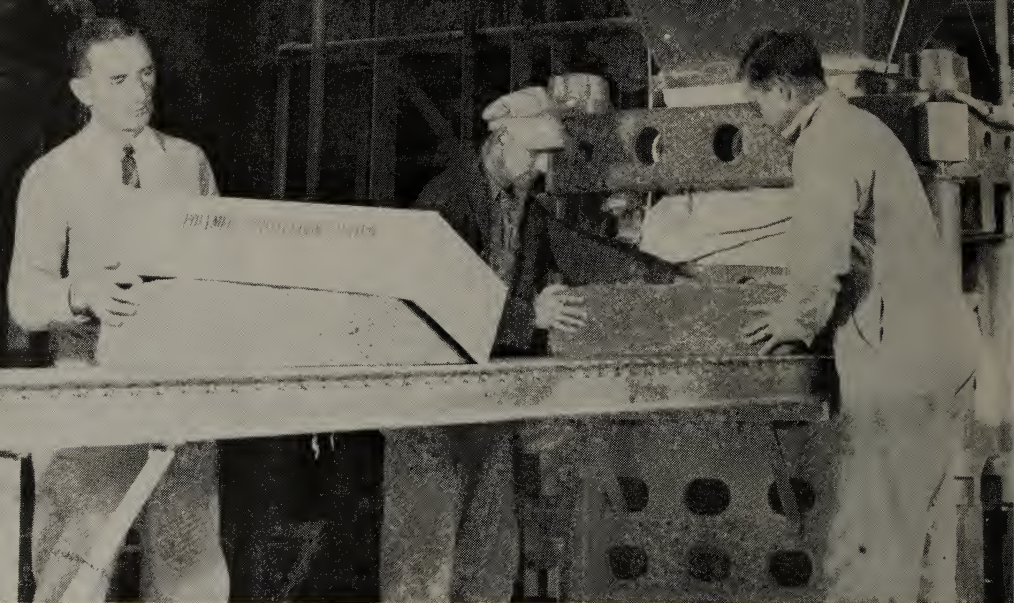


Photo: Courtesy Polymer Corporation Limited

North America does not need atomic energy to produce abundance for its citizens. We have enough energy now. All this jabber about the promised era of plenty from free energy is just Price System hogwash. We already have potential abundance. This one synthetic plant at Sarnia, Ontario, can produce all the rubber Canada uses in a year, about 35,000 tons. A 75 lb. bale comes out every 87 seconds. The plant produces buna-S and butyl rubber as well as styrene, butadiene and isobutylene.

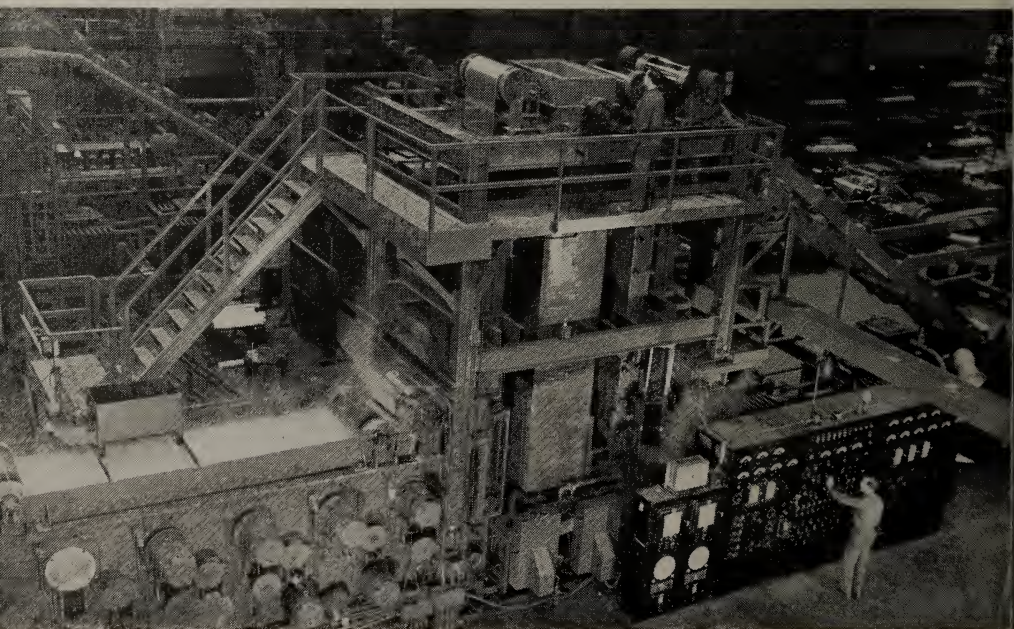


Photo: Courtesy U. S. Steel Corporation Subsidiaries

A complete melting tower for electrolytic tin plate. This type of plate uses only 1/3rd as much tin as the old hot dip method. However, unmelted plate has an undesirable dull white appearance. The melting is done with electric currents. As the coil travels through the tower at regulated speed the tin plating softens. Then it passes through a quenching medium and a roller. The coating solidifies acquiring dark lustre and high polish. The secret is in precision control of factors involved.



Photo: Courtesy Niagara Sprayer and Chemical Co., Inc.

Dusting an apple orchid in Western New York. This method is faster and cheaper than airplane spraying. Dust leaves the nozzle at 185 mph. velocity. Wind does the rest. In one test with oil-soluble DDT on a citrus grove 10 acres of trees were covered in 5 minutes. Indiscriminate spraying is likely to upset the Dynamic Equilibrium of insect life and made the problem worse. There are 80,000 varieties of insects in U. S. One acre may contain 15,000,000 insects. There must be control.



Photo: Courtesy International Harvester Company

One good reason why GI Joe can't go back to the farm. It's a one-man, pick-up hay baler. Last year 12,259 were sold. Between 1909 and 1942, farm production increased 54 percent, output per man increased 80 percent but jobs decreased 15 percent. In 1944 over 44,000 combines and 23,000 corn picking machines were sold also. T.N.E.C. Monograph No. 23 says: 'It must be conceded that there is a definite lack of employment opportunities in agricultural production.' Reason? No social control.



Photo: Courtesy Ford Motor Company

A scene on the Redwood Highway near Eureka, California. More than a million workers and their families obtain their living directly from the forests. Wood ranks near the top as a natural resource. The redwood of the Coast is a majestic tree. Some of them are almost old enough to have been standing when the crazy Price System began, thousands of years ago. SEQUOIA SEMPERVIRENS has some control and stability in its physical environment. The crazy Price System has neither. Or had you noticed?



Techphoto 8743-1

No social system can long endure half Price and half Technological. The crazy methods of Price System operations must be abandoned before it's too late. There is a scientific, social design ready. At hundreds of Technocracy Sections in the U. S. and Canada, like this one shown at 2204 W. Vliet St., Milwaukee 5, Wisconsin, information can be had about it. There are but two concepts in North America now. Ask your friends, the Technocrats, about the concept of Technological Control.

Primer of Technocracy

By Education Division 8741-1

'Every now and then they find a bum dead in a flophouse, with \$5,000 or \$6,000 sewed in his greasy underwear. The story is usually good for three or four paragraphs in the newspapers.

'The American people, collectively, are not unlike such a bum. We live in filthy, substandard holes. . . . Compared with our material resources, the fabled riches in the East would look like the merchandise in a hock shop—yet we are ill-housed.' (Excerpt from an editorial in the **CHICAGO DAILY NEWS**, January 3, 1945.)

Be It Ever So Humble—

TODAY there is a big to-do in this great nation about the housing situation. In fact, the problem is Continental in scope. The shortage of houses in the U. S. is stated to be 3,000,000, by John B. Blanford Jr., national housing administrator. Canada needs 750,000 more new houses. This is in terms of Price System estimates. Why the U. S. should need only 3,000,000 new houses is not elaborated upon. The reason, of course, is that there are only that many citizens who have the wherewithal with which to buy a house at the present time.

As a matter of fact, almost the entire population of Canada and the U. S. needs new housing, but the Price System can't tackle the problem on that basis. So it concentrates on the suckers who have enough cash or credit to be sold. They constitute the market. In the past this number has been running around 400,000 per year. To put it in the more genteel words of C. W. Farrier, Technical Director, National Housing Agency, as quoted in the *Southern Lumberman* for July 15, 1945:

An examination of the statistics of past housing production and of the costs of the housing produced, when compared with the

number of families on whom prudent loan institutions will accept a risk, discloses that the market cannot absorb much more housing at current costs than it has been absorbing in the past. Over the past 40 years the average yearly absorption has been about 445,000 homes. The average becomes even lower—400,000 homes—if the eight boom years of the 1920's are eliminated.

The 1940 census showed the existence of 30 million homes in non-farm areas. The production rate of 400 thousand homes per year would require 75 years merely to replace existing housing; and even that would not allow for the production of such additional housing as might be necessary.

In 1925, the best house construction year the U. S. Price System ever had, only 1,000,000 new homes were built. Leaving out the increase in population, it would take over 30 years to rehouse this Nation by Price System methods, if they worked at top speed with the best jerry techniques. Then, they could start all over again for the first houses would all have caved in.

There has always been a housing shortage in the U. S. This has been

aggravated since Pearl Harbor on account of several factors:

- (1) Very little new building since the war began;
- (2) Upturn in population due to war-time births; and
- (3) Migration to towns and cities due to war work and mechanization on the farm.

There's No Place Like Home

The increase in population since 1940 is already 7,000,000. It is estimated that total population in the U. S. will be 145,000,000 by 1950.

Due to mechanization of farming, the farm labor force has decreased by more than 10 percent under the 1935-1939 average. This process is just getting under way. The farm population of the future will be smaller. These people have moved into towns and cities. There they will stay for there is no place else for them to go.

Pearl Harbor and priorities put an end to construction of houses except for some wartime housing. Twelve million people went to work in war plants. This includes the 8,500,000 who were unemployed in 1940. Of course, they took better houses and apartments.

Now 12,000,000 veterans are returning home from the wars. Many of them have a sizeable stake for the first time in their lives. They want to get married. They need houses and apartments to live in.

All this adds up to a housing shortage that will do two things. It will, first of all, get worse. The politicians will muddle around with the problem to their hearts' content, getting in everybody's hair and accomplishing nothing. The second thing that will happen is that new technology will be introduced into the house construction industry. This new technology, because of Price System restrictions, cannot solve America's housing problem

now. It will, however, do considerable toward alleviating the situation.

*Rufus, Rastus, Johnson, Brown—
What You Gonna Do When
The Rent Comes 'Round?*

Any Price System entrepreneur with a cash register concept of social values, viewing this situation, is bound to chortle with glee. Construction interests, real estate firms and landlords are licking their chops. Once again they've got the great American sucker just where they want him. And brother, do they know it. The average landlord today is as snooty as a Maharajah. If it were not for the O.P.A., they would have inflated their rents nine times over by now.

As it is, they reduce heat, service and repairs to the limit. They demand and receive secret payments on the side, above the quoted ceiling price. They behave in every respect according to the classic concept of Price System rules: "Take all you can grab and give back as little as you have to." They say that they are caught between the upper and nether millstones of rising costs and fixed prices. For reference on this alibi, see *Great Lakes Technocrat* for May-June, 1945, page 53. As a matter of fact they behave that way because that's the code of the Price System. 'Never give a sucker a break..'

The independent small landlords of the U. S. have recently formed a National Organization. The Real Estate and Construction interests have had their national unions for some time. The line of action on which the lot of them are working is typically Price System. It is to break down rent control ceilings so as to obtain the following preferential advantages for their group. First comes higher rents for the cockroach rooming and apartment house operating segment of the conspiracy and, of course, for the

tonier places on the avenue also. Then comes higher prices and fatter profits for the construction firms and materiel suppliers. This goal is to be realized by applying the pressure of higher rents to tenants and thus sandbagging them into buying homes at the present inflated prices.

The average quotation on a house today is 50 percent higher than in 1940. If rent ceilings are broken down, new construction for rental purposes will be undertaken also, but not before. The housing gentlemen have previous experience at this game to their credit.

Shylock In Wonderland

From Armistice Day, 1918, till 1925 rents rose 57 percent. The thing which finally halted the rise was that new construction caught up with deferred demand of the market. Today, the housing pressures are far greater allaround. The construction industry, materiel suppliers and organized labor in cahoots with the politicians have done their level best since the last boom to freeze technology in construction to something like the level of the 'prosperous twenties.' That magnificent hindsight is the source of most of their real trouble today. In the words of Harry A. Dick, president of the Associated General Contractors:

It is much easier to gear our business economy to war than to shift it back to profitable peacetime operations. (*Chicago Daily News*, May 2, 1945).

The great uncertain factor in the construction industry today is new technology. There are so many new things on the horizon in housing that the entrepreneur in that line is dizzy from trying to figure out in which direction to stick his neck out.

There are the new solar houses. They will put an awful crimp in the

nation's coal consumption. Plastic, completely air-conditioned, prefabricated houses for \$1,500 are envisioned by one noted industrial designer. Packaged houses, complete to the last hardware fixtures, are an already established item. Pre-built houses, such as are used by TVA, are in the running. Standard-sized panels, providing several times the structural strength necessary, are now available. They can be assembled according to any design.

Mass production methods are entering the housing field. The old-fashioned nail-at-a-time method will have to yield. Foster Gunnison of Gunnison Homes, Inc. states that in the old handicraft method of construction there were '16,000 classifications' of home building materials. The houses they are turning off the assembly line at New Albany, Indiana, are so well constructed that the dealer is able to guarantee the monthly fuel cost to a prospective buyer, in any climate.

There are dozens of other new developments: radiant heating; tetra-cresyl silicate or liquid heating, a revolutionary new system for supplying heat and power for homes; magnesium oxychloride cement flooring, called Hubbelite, which repels bacteria, mold and cockroaches; reverse cycle refrigeration, to heat the inside of homes from the latent heat in the outside air; electrical household robots of all kinds that will do everything around the home except burp the baby. Yes, sir! It's no wonder Shylock is in a daze.

In the meantime, the great majority of people live like bums in a flophouse. What's more, they will continue to live that way under the Price System. Oh, there will be a minority who will get better housing. The Price System works that way. It is, however, congenitally unable to organize all the new technology in the construction industry and deliver it to the human

components of this Continent in the form of high grade housing for all. The reason is that this is a technological problem and not a financial, sand-bagging operation.

Engineers To The Rescue

The end products of design are radically different if one lays out the whole scheme of a given function in advance and then works down to the details, from what they would be if one started on the details and worked from them to the more general complex. (*Technocracy Study Course*, page 264)

This latter course of action, that is, starting from the details and working to the general complex, is how the Price System operates. The former course of laying out the whole scheme of a function in advance and then working down to the details is how Technology operates.

It can now be understood what is meant by referring to Price System methods in housing. Architects have designed thousands of houses, 'but no one has ever designed a system of housing on a Continental Scale.'

This brings us to the technological foundation of the whole subject of housing, namely, what are the buildings for? What do we have to build them with? What does it cost physically to maintain them? And how long will they last? (*Ibid*, page 262)

The answers to these questions have been all worked out. If and when applied, they are capable of providing the very best available housing for every citizen of North America. The requirements are few and scientifically sound. The first one is that we, the people of North America, must abandon the Price System and set up a

socially engineered system. After that is done, we can all have good housing. And it won't take 30 years to get it either.

There is a great deal more to be said about housing. None of it, however, is worth listening to unless it starts from the basic premise of Technocracy. 'All phenomena involved in the operation of a social system are metrical.' The housing problem is only one facet of the far greater problem of distribution of goods and services as a whole. This can never be solved by Price System methods.

So, let us resign ourselves to live like bums in a flophouse. After all, the situation redounds to the greater glory of the big shots on top of the social dung heap, doesn't it? Every man is entitled to as many crumbs as he can grab in the pursuit of life, liberty and happiness, isn't he? It says so in the Declaration of Independence.

Or, would you rather have good housing? If so, then wake up *MAN!* *Snap Out Of It.* Use the feeble wits the Lord gave you. Examine the operating mechanism of the crazy Price System you exist under. Observe its tyranny and regimentation on all sides. Go through the book until you see what Technology has to offer. Accept no substitutes for the real thing. Demand action. The time is *NOW*. Do you want to live like a bum in a dirty flophouse all your life?

We, the people of North America, can move into a wonderful system of functional housing any time we want to. We have the men, machines, materials and knowledge to build with. If we do not act, we will die like bums in the collapse and chaos of this perishing economic order. When the cops of history examine the remains for identification, they will say: 'The poor fool had thousands sewed up in his underwear all the time.'

Technocracy and Your Trade

The Textile Worker

By Organization Division 8741-1

Fifty Seven Varieties

TEXTILE work is divisible into many branches. There is the cotton goods industry, the woolen and worsted goods industry, and the synthetic yarns industry. There are mills where yarn is spun and cloth is woven and factories where these are fashioned into many varieties of finished products. In apparel manufacturing alone there are dozens of classifications.

The cotton goods industry is one of the least concentrated of the nation's important industries. 'In 1935 the four largest firms produced only 8.4 percent of the industry's value of products.' (TNEC Monograph No. 22). 'Few of the mills produce a finished product from the standpoint of the final consumer.—For the most part they merely supply the raw material to the next processing agency.' (Ibid. p. 276). There is a lack of integration and severe competition in the cotton goods industry. Mill units are widely scattered geographically and the majority are small in size, independent in ownership and specialized as to output. These factors cause the existence of a large number of weak firms constantly in need of more business.

The woolen and worsted goods industry is somewhat more highly concentrated. 'In 1935 the four largest firms produced 24.2 percent of the industry's value of products. The woolen and worsted goods industry is, however, characterized by a much greater degree of integration than the cotton goods industry.' (Ibid. p. 281). Although there is great integration in the woolen and worsted goods industry, there is a multiplicity of pro-

ducers, which leads to intense competition. Both cotton and wool industries are characterized by excessive plant and equipment, with too great a capacity in relation to the available market.

You Can't Work Here Any More

Technology has been hard at work in the cotton goods industry. There has been a great variety of new installations operating ever more efficiently and at higher rates of speed. The results show up in greater productivity and lowered man-hours. In 1919 the cotton goods industry employed 430,966 workers. By 1936 their number had been decreased to 391,00. Between 1929 and 1936 man-hours used dropped off 28 percent. However, output per man-hour rose 32 percent between 1929 and 1936. The total increase in man-hour productivity between 1919 and 1939 was 64 percent. In other words, the cotton goods industry in 1939 was able to produce 64 percent more than in 1919 with no increase in jobs whatsoever. Or, to reverse it, could produce in 1939 as much as it did in 1919 with 64 percent less workers.

The story is about the same in the woolen and worsted goods industry. In 1919, it employed 199,787 workers. In 1936 only 151,500. Between 1929 and 1936 man-hours used dropped off 22 percent. However, output per man-hour rose 41 percent between 1929 and 1936. The total increase in man-hour productivity between 1919 and 1939 was 77 percent.

The picture of technology's impact for both industries as a whole between 1919 and 1939 looks like this: Pro-

duction rose 43 percent, man-hours of labor dropped 21 percent and total employment rose one little measly percent, yes, just one.

In connection with this picture, it may be well to remember two things. First, the total mass purchasing power of textile workers is not based upon total employment but upon the total man-hours of labor used. Theoretically, it would be possible to employ many more thousands but the hours would have to be cut commensurately. This is the low road to a coolie level of existence. The second point is that while total population of the U. S. rose about 25 percent between 1919 and 1939, the textile industry provided only 1 percent more jobs.

The Chemist Is At It Too

Up to now, we have avoided mentioning the synthetic yarns industry. The cotton and wool industry is as old, or older, than the Industrial Revolution. The introduction of new technology there has always had to be delayed and hindered by existing cruder technologies. Not so with the synthetic yarns industry. It is starting off under the best conditions of technological advancement and application. Rayon is only about 35 years old, in 1945 it will reach almost one-fifth the production of cotton. It has already passed wool production.

Nylon is still newer, but its use is increasing rapidly. Today there are eleven synthetic fibres being produced commercially. There are three types of rayon, nylon, Vinyon, Fibreglas, Aralac, vinylidene, Plexon, synthetic rubber and Tensylon. These are bound to take a large part of the market away from cotton and wool. The effect will be to stimulate the introduction of better technological methods with a consequent reduction in man-hours of labor.

Further, there is a completely new

basic process in cotton mill technology, the first since the invention of the art of weaving thousand of years ago. In the Chicopee Mill at Milltown, New Jersey, cotton is combed out straight to form a continuous sheet about a quarter inch thick. It is then compressed to normal thickness between rollers and over-printed with a liquid plastic which binds every individual fibre permanently in place. The plastic imprinting can be of any decorative design or color. The printed material is dried over heated cylinders. Thus, in one single operation, raw cotton is technofactured into a finished textile.

You may rest assured there will be mighty few man-hours of labor used in this process or in any of the new synthetic yarns. In the Rayon industry the increase in productivity per man-hour between 1923 and 1939 was 333 percent. The time for production of yarn at the Painesville, Ohio, plant was reduced from 85 hours to 5 minutes. And so it goes. We could fill a book with the story of the impact of technology upon the textile industry.

The story is the same as in every other industry; the same as for North America as a whole. The war is over now, and the temporary prosperity and security of the textile worker is at an end. He, and she, are now face to face with the common social problem of the Power Age. What shall we do to live? Strike? The necessity becomes inevitable. But what does it solve? Every boost in hourly wage rates brings about the introduction of better technology to decrease the number of man-hours necessary.

Under the tyranny and regimentation of the Price System, the cards are stacked against the textile worker. The more he wins in the short run, the more he losses in the long run. In addition to union organization, which

is vitally necessary to obtain immediate economic benefits and to prevent being stripped stark naked by the entrepreneurs of the textile industry, the textile worker needs something else. He needs a longer range objective.

He needs to become cognizant of an overall and permanent solution for his own particular problems and for those of all other Americans as well. He needs to know that there is no solution to his own problem apart from others. Indeed, there is no solution to anyone's social problems within the framework of the Price System. There is a solution to all social problems of the Power Age, individually and collectively. It is a grand and glorious solution too. It is scientifically sound and workable.

The matter is too long to go into in a short story of this type. If the textile worker will turn his attention

to the Body of Thought known as *Technocracy*, a totally new and better world of social living will come into view. He will see North America as it can be when a sufficient number of citizens are determined to have it. He will see a social system wherein Science and Technology are organized into the prime function of living.

After all, that's what we all want, isn't it? We all want to live as well as possible. We all want less work and more purchasing power; less scarcity and more goods and services; less insecurity and more abundance; less religious and social discrimination and more equal opportunity. Try to get it under the Price System. It's a fool's dream. Quite dreaming, Mr. and Mrs. Textile Worker! Wake up! Follow Roger Bacon's advice. 'Look at the World.'

Investigate Technocracy!

The Yardstick Is Energy

'Had there been no changes in weekly hours, the 1929 output in manufacturing could have been produced in 1939 with 2,036,770 fewer wage-earners, a 24.5 percent reduction in a decade. The 1930 output could have been produced in 1937 with 295,550 less wage-earners in steam railroads and 40,538 fewer in bituminous coal mining, reduction of 20.2 and 9.7 percent, respectively, within only 7 years. The seriousness of a technological displacement of over 2,000,000 adjusted man-years in manufacturing during one decade, of nearly 300,000 in steam railroads, and of over 40,000 in bituminous coal mining in only 7 years requires no elaboration.—T.N.E.C. Monograph No. 22, page 129.

'In the first Atlantic passenger liners of a century ago, with a fuel consumption of 8 lbs. per hp.-hour, they burned so much coal that in winter on the westbound pas-

sage, when head winds were expected, they dared carry little except coal.

'It is interesting to note what an influence fuel economy has on ocean transportation: From 8 lbs. per hp.-hr. a century ago, the fuel consumption was reduced to 4.5 lbs. by 1845, 3.5 by 1855, 3 by 1865, 2.5 with the high pressure boiler by 1875, to 2 lbs. with triple expansion engines of 1885, and 1.5 lbs. per hp.-hr. with the quadruple-expansion engines of 1895 and onward. If it had not been for improved fuel economy voyages to Australia would still have to be made by sailing craft.'—*Chicago Daily News*, Financial Page, November 28, 1942.

Immediate demands for commodities will be vast, but watch out for the long pull a year from today. Foreign countries will again be producing in volume to fill their own requirements.—*Chicago Daily News*, August 21, 1945.

Technology Marches On!

Glimpse of the Future

By Research Division 8741-1

Agrotechnology

THE U. S. Sugar Corporation is operating a 100,000 acre agrotechnological unit in the Florida Everglade country. The shape of industrial farming, a combination of field and factory, is taking form there. About 7,500 workers are employed on the land and in the plants. Crop units are from 1,000 to 4,000 acres each, cut up into 80 acre plots for tillage.

'Hydraulic engineers, soil chemists, plant pathologists, geneticists, agronomists, nutritionists, entomologists and live stock experts cooperate to produce amazing yields of sugar and develop new crops for this climate where growth never stops.'

The farm includes the largest raw sugar mill in the U. S. Production is 100,000 tons a year. Thirty thousand acres are devoted to sugar cane. A yield of 33½ tons to the acre is obtained. This is nearly double the Louisiana and Cuba average. About 12,000 acres are devoted to sweet potatoes. A yield of from 500 to 700 bushels per acre is obtained. The potatoes are converted into starch in a plant on the farm, which will turn out 50,000,000 pounds this year. After the 70 percent of water in the potatoes is removed by centrifuging, this liquid is fermented into methane gas to power the boilers of the starch plant. Daily yield of gas, in season, is 1,000,000 cubic feet.

About 1,000 acres is devoted to ramie. 'Ramie is the world's strongest and finest vegetable fibre.' Four successful machines for removing the fibres from the unuseable part of the stalk are in operation in Florida. This process is called decorticating. After

the fibres are decorticated, they must be degummed, that is, separated from the tenacious natural gum that sticks them together.

The Belle Glade Experiment Station of the State of Florida and Newport Industries, which has plants at Pensacola and elsewhere, are trying to develop a ramie fibre industry. If the decorticating and degumming problems can be solved, success is assured.

About 1,000 acres is devoted to lemon grass with yields running around 1,000 pounds per acre. Citral, an aromatic oil, is obtained from lemon grass. The tops of the ramie plants, sweet potatoe vines, the sweet potatoe pulp and the spent lemon grass after distillation are marketed as live stock food. (*Wall Street Journal*, June 19, 1945). *Ed. Note:* See *Technocracy Study Course*, published 1934, pages 256 and 261.

Tire Technology

The General Tire and Rubber Co. of Akron recently unveiled a new machine that completely eliminates the need for skilled labor, reduces the percentage of rejections and turns out a better tire. The machine is semi-automatic and turns out a tire every two minutes. This is more than twice the output of the best machine in use today, and five times better than hand methods. The machine requires only one operator and two assistants. The only steps which require human labor are placing the bead in position, ripping the fabric on the bias, cutting the breaker strip and removing the tire from the machine. (*Business Week*, November 3, 1945). *Ed. Note:* See *Tires, Toil and Technology* in *The Technocrat*, April 1940.

Carpentry

An automatic nailing machine for use in the furniture and woodworking industry has been put on the market by the Auto-Nailer Co., of Atlanta, Georgia. The machine uses a coil of specially knurled wire for its supply of nails. Precision shearing knives cut the wire at the correct angle for easy driving. Length of nails is controlled by a calibrated dial which can be set for any desired length. Nails can be driven flush or countersunk at the rate of three per second. The automatic nailer is powered by an electric motor in its base. (*Business Week*, October 27, 1945). *Ed. Note: See Technocracy Study Course*, bottom of page 150.

Materials Handling

The new hydraulic Drott Skid-Loader, a device for transporting pulpwood from pile to truck, is claimed to be the first successful machine to replace handloading of pulpwood. According to its manufacturer, Hi-Way Service Corp., Milwaukee, Wis., the Skid-Loader is capable of moving a cord of pulpwood from pile to truck in 1½ min. It would require 25 men to do this job in the same time. The unit consists of a steel frame with rack attachment and is mounted on a 60-hp. diesel tractor. The Skidloader can also be used for handling posts, poles, railroad ties, and other forest products. By adapting the proper type rack and bottom structures, it can also be used for transporting, loading, and piling a variety of materials ranging from shavings to rock. (*Paper Trade Journal*, May 17, 1945). *Ed. Note: See Chapter 6, Technocracy Study Course.*

Packaging

An automatic continuous packaging machine, developed by Marathon Corp., Menasha, Wis., and Food Machinery Corp., feeds, opens, fills and closes 75 to 80 twelve-ounce cartons

of frozen vegetables per minute. Less than 1/5 of the personnel usually employed to handle these operations are required to attend the machine. The Marathon telescope laminated carton, which was used during a demonstration of the machine, is claimed to provide adequate protection against dehydration without the liner ordinarily used for frozen food packs. The machine is expected to make it possible to package consumer foods promptly at harvest time, eliminating the usual intermediate steps of storage in bulk and later repacking into consumer-size packages. (*Western Canner and Packer*, May 1945.) *Ed. Note: See Technocracy Study Course*, page 266.

Communication

Three new developments in telephone and telegraph communication will revolutionize these industries and destroy thousand of jobs. About two-thirds of the country's telephones are dial operated at present, but only 5 percent of the 2,700,000 daily long distance calls are handled by the dial method. A new long distance dialing system will connect any two telephones in North America in less than a minute. What's more, the new system eliminates four out of five long distance operators. The method involves the installation of new toll dial switching equipment and the setting up of a new toll dial operating method. The *Bell Telephone Magazine* says: 'Much work will have to be done but accumulated experience and the present toll plant together provide a sure foundation on which to build the bold new structure.' (*Chicago Tribune*, October 2, 1945, and *Wall Street Journal*, September 24, 1945.)

The International Telephone and Telegraph Company is testing out a revolutionary new system of radio telephony and telegraphy. A success-

ful test was recently made over a triangular circuit, using two repeater stations, from New York to Nutley, N. J., and back. The new method is entirely electronic, using pulse time modulation (PTM). Twenty-four telephone conversations can be fed through a single transmitter at the same time. At the receiving end, they are automatically sorted out to the correct telephones. Pulse time modulations chops up conversations or programs into pulses one-half millionth of a second long, precisely spaces them in time sequences and sends them forth as a radio wave. Parabolic reflectors are used as antennas to beam the waves. These are spaced 30 miles apart as relay stations. They operate automatically and require no attendants. P.T.M. makes use of the principle that there are gaps of silence in conversations. These gaps occur at such high speed that a listener is unaware of them. The effect is similar to the illusion of continuity in a moving picture, where, in reality, the screen is dark much of the time. The human eye cannot detect these dark intervals. Neither can the ear detect the gaps of silence in talk, music, etc. If there are 8,000 silence intervals per second, it provides enough time to squeeze in 24 two-way conversations as well as a 25th pulse, the marker pulse, which keeps the cyclophon tubes on the sending and receiving ends operating in unison. 'The result has been described as an interweaving in time of one group of signals with another.' Radio frequencies in the neighborhood of 1,350 megacycles are employed. (*Chicago Daily Times*, November 4, 1945, and *Business Week*, October 6, 1945.)

The Western Union Telegraph Co. has made application to the Federal

Communications Commission to convert its pole and wire system of telegraphy to a radio system. Frequency modulation will be employed. An experimental circuit has been in operation for six months between New York and Philadelphia. The system will make obsolete the present 2,300,000 mile, telegraphic network and destroy thousands of jobs. Essentially, it is a radio relay system with stations spaced 30 miles apart, automatically operated. Over 1,000 telegrams can be transmitted simultaneously. The present wire system is limited to 6 messages on a single pair of wires. It is said that radio-relay telegraphy 'is expected to produce operating economies, reduce maintenance and give greater speed and flexibility of service.' The new system uses radio frequencies somewhere between 3,000 and 15,000 megacycles. (*Business Week*, October 27, 1945.) *Ed. Note: See Technocracy Study Course*, chapter on Communication, page 255.

Foundries

A photoelectric device made by Photoswitch, Inc., Cambridge, Mass., enables several ladles of molten metal to be poured simultaneously by remote control operation. The device eliminates the usual hazard of hand pouring and permits several molds to be filled in less time than manual pouring takes to fill one. The photoelectric control is located directly above the ladle. When an empty mold is in position before the ladle, the operator pushes a button that causes the hydraulic actuating mechanism to pour molten metal from the ladle into the mold. When the metal reaches the riser of the mold, the photoelectric device instantly drops the ladle back to the non-pour position. (*Steel*, June 4, 1945.) *Ed. Note: See Technocracy Study Course*, bottom half page 116.

Home Heating

A revolutionary heating system, called the Liquid Heat Consolidated Unit, has been developed by the John B. Pierce Foundation in cooperation with the NHA Office of Product Research and Development. With the new system, all household appliances utilizing heat might be supplied from a single source of power with a 48 percent saving in fuel costs over the conventional combination of heating services. The basis of the new system is a chemical identified as tetra-cresyl silicate which will absorb heat up to 817 deg. F. To date, piping insulated with 2-in. thick fiber glass has been found most satisfactory for withstanding the high temperatures involved. (*The Architectural Forum*, June 1945.) *Ed. Note:* See *Technocracy* magazine, Series A, No. 5, page 13.

Machine Tools

Aluminum and magnesium parts are machined rapidly and accurately at Aircraft Products Mfg. Corp., Des Plaines, Ill., by a battery of special machines equipped with special interchangeable attachments that eliminate many tools and fixtures used in conventional machining processes. Tool and fixture costs are claimed to be reduced 50 percent. With these machines a sequence of operations such as surfacing, boring, milling, and drilling can be carried out at one setting without altering the piece or holding fixture. Special machines built by Hack Machine Co. permit 4 heads to be mounted on the master head at the same time, making possible the production of 4 pieces simultaneously. By setting up the machine instead of the job, and through coordination of special combinations of heads with vernier scales built into the machines, precise position of the part in relation

to cutting tools is possible in all directions. This method assures jig bore precision between related surfaces whether drilled, slotted, or milled. With this set-up, work can be held to much closer tolerances than are possible when operations are done individually, and extremely difficult machining jobs not practical with usual equipment can be done accurately and speedily. (*Steel*, June 25, 1945.) *Ed. Note:* See *Introduction to Technocracy*, bottom half, page 17.

Office Machines

A new calculating addressograph machine is being planned for volume production by the Addressograph-Multigraph Company. This machine automatically figures dividends, hourly payrolls, and other large volume disbursements, writes checks, and keeps a summary of all the transactions. In a test conducted by the Manufacturers Trust Co. of New York, a machine completed a dividend job in 10 or 11 machine-hours that formerly required 140 man-hours. The machine utilizes stamped metal plates to which have been added punched holes representing the number of stock shares, pay rates, or whatever is being computed. Plates, inserted by the drawerful into the robot and fed individually into printing position, energize the calculator according to the arrangement of the punch holes to print the payee's name, address, and amount of dividend or check in a single stroke. Blank checks in sheet form or roll form enter automatically from the left and are delivered at the right, while a summary of all transactions is imprinted on a large roll of paper. A new development not yet ready for the dividend disburser permits the plates to be prepared in Chinese, Korean, and other ideographic scripts. (*Business Week*, July 14, 1945.) *Ed. Note:* See *The Technocrat* for May, 1939, page 8.

Each in His Own Tongue

By Publications Division 8741-1

Voice of the Price System

STATESMANSHIP.

I realize there always is more crime after a war. Our police know this and are ready. It is not that crimes are committed by exservicemen particularly. The devil is in the air after every war.

Mayor Edward J. Kelly of Chicago as quoted in an interview in the *Chicago Daily News*, September 8, 1945).

GENTLEMEN FARMERS

—the American farmer believes . . . that it is not the responsibility of government to assure every individual a full time job at competitive levels of pay.

A statement by the board of directors of the American Farm Bureau Federation meeting at the Hotel Sherman in Chicago (as quoted in the *Chicago Sun*, August 31, 1945).

RAILROAD TYCOON

Every year of war means good business for a year after it ends. The war has lasted five years; therefore I expect five years of better-than-normal business.

R. L. Williams, president of the Chicago and North Western Railway (as quoted in the *Chicago Daily News*, July 17, 1945).

MUTUAL ADMIRATION CLUB

We in advertising are proud of our part in making possible our great free press, happy that while using your columns to sell our goods we also are supporting your effectiveness in sustaining our democracy.

Elon G. Burton, president of the Advertising Federation of America, addressing the 61st Annual Convention of the Inland Daily Press Association at the Congress Hotel (as quoted in the *Chicago Sun*, October 19, 1945).

AUTHORITARIANISM

When our leaders speak, the thing has been done. When they propose a plan—it is God's plan. When they point the way, there is no other which is safe. When they give direction, it should mark the end of controversy. God works in no other way.

From the June 1945 issue of *Improvement Era*, an official publication of the Mormon Church (as quoted in *The Nation*, August 18, 1945).

ECONOMICS

Labor unions acting in conjunction with the federal government were largely responsible for prolonging the last depression seven or eight years after recovery should have taken place.

Willford Isbell King, professor of economics, New York University, in an address before the Rotary Club of Chicago at the Hotel Sherman (as reported in the *Chicago Daily News*, September 25, 1945).

BANKING

I should deplore an assurance of full employment. So far as I know, full employment has never been achieved for any period of time in a modern state except under a program of preparation for war or under the compelling

needs of actual war, as recently in the United States.

Allan Sproule, president Federal Reserve Bank of New York, in a letter to Senator Wagner (Dem. N. Y.), Chairman of the Senate Banking and Currency Committee, in opposition to the so-called full employment bill (as reported in the *Chicago Tribune*, August 25, 1945).

FAMILY GUIDANCE

Marriage is not a matter of passion, but of compassion. The only thing which makes a man feel big is littleness. Men are not made to feel big by being told they are big. Upon the wife rests the moral problem of being little without being a doormat—then

the problem of her husband's courage, her loneliness, their social, financial and physical compatibilities are a long way toward being solved.

Rev. Edward Dowling, S.J., to an audience at the Summer School of Catholic Action at the Morrison Hotel (as reported in the *Chicago Daily News*, August 28, 1945).

ATOMIC BOMB

Our savage generation cannot be trusted with it. Such power of destruction would have been a social hazard even in the civilized thirteenth century.

Jesuit Father Robert I. Gannon, president of Fordham University (as quoted in the *Converted Catholic*, November 1945).

Voice of Technology

PLAYING SANTA CLAUS

When the wraps of propaganda are taken from the four freedoms, we shall find the Four Horsemen again charging down the corridors of time. . . . If our financial books were balanced we should find that America, as the world spendthrift and chief of international pump priming, is the first great nation in history to have fought two wars in order to finance a bankrupt imperialism.

Senator Shipstead (Rep. Minn.) in an address to representatives of 167 Lutheran Churches in the Chicago area at the Civic Opera House (as reported in the *Chicago Tribune*, October 29, 1945).

POLITICAL METHOD

Alcohol is the psychological medium through which much legislation is handled. It makes

Congressmen a prey for lobbyists. . . . Alcohol is a major factor in Congress and exercises a most damaging effect on legislation. The State Department and the Diplomatic Corps are stuffy with drunks.

Dr. Michael M. Miller, psychiatrist at St. Elizabeth's Hospital in Washington, D. C. (as quoted in *Labor*, August 18, 1945). *Ed Note:* Internal Revenue figures reveal that the per capita consumption of liquor in Washington, D. C. is four times greater than the National average.

TECHNOLOGY

Mechanization of plant and equipment is the only answer to the high hourly and weekly wage rates which will prevail after the war. . . . This trend toward mechanization will culminate in a great boom in the

production of labor saving machinery of all kinds.

Lionel D. Edie, economist (as quoted in *Power*, January 1945).

Underlying the whole (of our time) is an understanding of the social consequences of scientific discoveries which has moved on to the recognition that technology itself is a prime mover in social change. It is too late now to think in terms of adjusting to a single invention. Technology is an entirety.

A. G. Mezerik, book reviewer, in the *New Republic*, February 26, 1945.

ANTI PATENT BURYING

That as we enjoy great advantages from the inventions of others, we should be glad of an opportunity to serve others by any invention of ours; and this we should do freely and generously.

Benjamin Franklin (1706-1790) in a letter to the Governor of Pennsylvania, declining the offer of a patent for the 'sole vending' of his invention of the Franklin Stove.

OBSCURANTISM

Man-made concepts such as devils, witches, taboos, hell, original sin and divine revelation, kept alive in an unending chain of emotionally tinged spoken and printed words, have distorted

the intellectual process of millions of persons over the centuries.

George D. Stoddard, New York State Director of Education and president-elect of the University of Illinois, in his book *Meaning of Intelligence*.

SCIENCE

I plead for recognition of the fact that progress in science does not only consist in accumulating information which may be put to practical use, but in developing a spirit of prevision, in taking thought for the morrow; in attempting to forecast the future, not by vague surmise but by orderly marshaling of facts, and by deducing from them their logical outcome; and chiefly in endeavoring to control conditions which may be utilized for the lasting good of our people.

Sir William Ramsey, in his presidential address to the British Association for the Advancement of Science, 1911.

BANDWAGON PSYCHOLOGY

First, a new theory is attacked as absurd; then it is admitted to be true, but obvious and insignificant; finally it is seen to be so important that its adversaries claim that they themselves discovered it!

William James (1842-1910), American psychologist and philosopher (as quoted in *Aviation*, February 1945).

Discovering Resources

Near Boyertown, Pa., a huge deposit of magnetite, an important iron ore, has been discovered by the U.S. Geological Survey. Rough measurements show the ore to be only 100 to 130 ft. underground, which is considerably nearer the surface than other iron-ore deposits known to exist through the East.—*Industrial and Engineering Chemistry*, May 1945.

'Some one once said that a good way to test the quality of whiskey is to pass an electric current through a quart of the stuff. If the current causes a precipitation of lye, tin, arsenic, iron slag and alum, the whiskey is fair. If, however, the liquor chases the current back to the generator, you've got good whiskey.'

—EXCAVATING engineer

So Wags the World

By Research Staff, GLT

Fascism and Anti-Fascism

NORTH AMERICA

UNITED STATES

Mrs. Emily Barret Blanchard, author, and her literary adviser Edwin Seaver entered into a contract with Doubleday, Doran and Co., on March 23, 1944, to publish a book that Mrs. Blanchard was working on. The book was entitled *Mexican Merry-Go-Round*. When Doubleday's editor-in-Chief received the manuscript of the book, he called in the head of Doubleday's South American affiliate and had him go over the manuscript. This gentleman, Manuel Jove, reported that publication of the book would make plenty of trouble with the Mexican Government and 'hamper our operations down there.'

Mexican Merry-Go-Round is an anti-fascist book. Mrs. Blanchard said she had endeavored to show the tie-up between Franco's *Falange* and the Sinarquista group in Mexico, together with the reactionary political, economic and educational activities of the Roman Catholic Church there. One chapter deals with Axel Wenner-Gren, Swedish multi-millionaire, who has been called 'Axis super-agent for the Western Hemisphere.' Mrs. Blanchard was approached by agents of Wenner-Gren and warned not to say anything derogatory about him. Other sections of the book deal with Ezequiel Padilla, candidate for President of Mexico in next summer's election; and Maximo, brother of the present President of Mexico. Mr. Jove said that the material about them, while accurate and a matter of common knowledge, would create a storm of protest. Mrs. Blanchard said that Padilla is 'con-

nected with monopolistic big business and is against every interest of the common man in Mexico.' She accused the U. S. State Department of being reactionary and wishing to see Padilla elected President in 1946.

The upshot was that Doubleday Doran refused to publish the book. Mrs. Blanchard and Edwin Seaver are suing the firm for \$253,500 for breach of contract.

Senators Kilgore (Dem. W. Va.) and Magnuson (Dem. Wash.) have introduced a Bill to set up a National Research Foundation to subsidize technological research in industry, public health and national defense problems. It is patterned after the recommendations of Dr. Vannevar Bush, Director of the Office of Scientific Research and Development. The Bill proposes Federal grants to schools and private laboratories to encourage basic research in all branches of science; give U.S. scholarships to science students; force the public use of all patents, discoveries and inventions produced through Federal aid; create international cooperation to improve the technology of all the world.

CANADA

Newspaper reporters in Montreal, Quebec, who are assigned to cover the City Hall, get a bonus of \$900 a year from the city in addition to the salaries paid by their newspapers. In former years the bonus amounted to as much as \$1,400 a year. There are from 8 to 10 active City Hall reporters eligible for the bonus. The

expense is charged to 'advertising' by the city. It is said in local newspaper circles that the reason the City pays these sums out is to assure that stories the City wants publicized are handled 'adequately.' Montreal is governed by a Council of 99. Thirty-three are elected by the voters, 33 by the landlords, and 33 are appointed by the Chamber of Commerce, the Board of Trade and the Universities.

The fabled Northwest Passage, sought ever since the voyage of Martin Frobisher in 1576, has been conquered at last. It lies around the top of North America through the Arctic

Ocean. Roald Amundsen made the first trip through the Passage in 1903. It took him three years. The Royal Canadian Mounted Police Schooner *St. Roch* made it in 86 days recently. 'The route through the Northwest Passage is suitable for summer traffic by wooden vessels,' declared Sub-Inspector Henry Larsen, skipper of the *St. Roch*. The 80-ton ship crossed the top of North America from Sydney, Nova Scotia, to Vancouver, B.C. On the journey she picked up relics of earlier expeditions which failed, including British foodstuffs 100 years old. The *St. Roch* is diesel-powered and was specially built to buck heavy ice.

SOUTH OF THE RIO GRANDE

ARGENTINA

John M. Cabot, American Charge d'Affaires in Buenos Aires, together with several Embassy officers, attended a reception at the Embassy in Buenos Aires on the evening of October 12, 1945. The reception was held in honor of El Dia de la Raza, which is called 'Columbus Day' in the U.S. El dia de la Raza has a special significance in Latin America. Fascist Spain has emphasized it as part of fascism's plan to divide Latin America from the U.S. Nevertheless, our ranking Embassy official and subordinates attended.

At 9 P.M., when the party was just getting good, the Argentine police turned machine guns loose on 40,000 people gathered in San Martin Plaza. Many were killed and wounded. While the people of Buenos Aires were being mowed down by the fascist police, the representatives of 'Free America' were drinking cocktails with the upper fascists behind the mowing down. In explanation of his conduct, John M. Cabot said: 'We went because the

other 19 American Republics would think we were taking a slap at them if we did not attend the "Dia de la Raza" celebration, and our absence would have driven them closer together.'

MEXICO

The Mexican-American Conference on Industrial Research was held recently in Chicago under the auspices of the Armour Research Foundation of the Illinois Institute of Technology. It was attended by 30 Mexican scientists and industrialists. The conference lasted a week. Its object was to stimulate scientific development and industrial research in both Mexico and the U.S. The guests attended a series of lectures and demonstrations at the Institute.

Two-thirds of Mexico's people live on the land, producing food and raw material for the other third. In the U.S. only about 20 per cent live on the land. 'Mexico needs more power plants, more textile, shoe and leather goods factories; we can use many new

industrial plants to convert our rich store of raw materials into finished products,' said Gustavo P. Serrano, secretary of National Economy in the

Mexican Government. Serrano said that he believed the key to better living for Mexicans is to emulate U.S. industrialization.

EUROPE

GERMANY

Shares in four big trusts, which were a heavy factor in Germany's war-making power, are selling at higher prices on the Frankfurt Stock Exchange than during the war. I. G. Farben Co., the steel combine, Metallgesellschaft, the Holzmann Contracting firm, and the Opel automobile works are listed.

Thousands of Baltic fascist nationals from Latvia, Estonia and Lithuania have crowded into the American Zone of Occupation in Germany. Masquerading as displaced persons, they fled before the Soviet Armies in 1944. Benefiting from directives designed to aid bona fide displaced persons, they get gifts of clothes, free medical care and preference for jobs. An American officer in charge of camps for displaced persons said that the camps are refuges and free homes for Baltic collaborators who were in the Gestapo and the Elite Guard. Some have been identified by bona fide Polish refugees

as members of a Lithuanian-Fascist guard over Polish laborers who built the ghetto for Warsaw Jews.

Out of the London meeting of the foreign ministers of the five major powers came a technological decision of importance. A centrally controlled transport and communication system for all Europe is to be set up. The object is to rehabilitate and coordinate the water, rail and highway transport of the Continent into one system. A similar effort by the League of Nations, years ago, failed. No customs duties are to be levied, and all goods will move freely at greatly lowered costs. There will be unification of tariffs and a unified clearing system. The agreement was signed by 12 countries, including Russia. The new organization is called European Central Inland Transport Organization. It is said that the agreement marks the breaking of the bonds that have held Europe's economy in chains for centuries.

ASIA

SOUTHEAST ASIA

At the time of this writing, Japanese and Allied soldiers are fighting side by side to put down independence movements in Indo-China and in the Dutch East Indies. American lend-lease arms are being used by British, Dutch and French troops to liquidate the Nationalist aspirations of the Annamites and the Indonesians. In response to criticism, the State Department ordered the British and Dutch

to remove Lend-Lease labels from all Lend-Lease arms being used to crush the Asiatics.

One foreign reporter noted that Lend-Lease arms have never been labelled. However, he pointed out that the title to these arms remains in the hands of the U.S. It is written into all Lend-Lease agreements that such arms can be repossessed at any time. If you're on the shooting end of an American weapon, it's pretty hard to

tell whether it's Lend-Lease or paid for. If you're on the receiving end, it's all the same.

Hoch, der Price System!

INDIA

A delegation of Indian industrial leaders is currently in the U.S. studying manufacturing processes and seeking American assistance for a program of industrial expansion in India. India's greatest need, they said, is for replacements in its textile industry, for machine tools, power equipment, road building machinery and electrical goods.

The visit is a sequel to the publication of the Bombay Plan last year. This plan envisages a 15 year program of industrial expansion for India. Extensive outside assistance is needed. Although India is a creditor nation, most of its foreign credits are locked up in the British Sterling Bloc. They cannot be cashed except for British goods, and British industry can't deliver the goods. India needs to become industrialized. It looks as if Uncle Sam will be exporting some more technology very soon.

Land of the Free

Paper Makers 'Gang UP' to 'Gyp' Uncle Sam On Prices

James F. Walsh, a paper merchant, decided to try a little free competition. He cut 1 percent off his commission, thus reducing the price of 3,000,000 pounds of book paper he offered to Uncle Sam's Government Printing Office at Washington.

All other 13 'bidders' offered paper at an 'identical price'—1 percent higher than the price which got Walsh the contract.

That identical bidding was no coincidence, the Federal Trade Commission declared this week when it ordered the Book Paper Manufacturers' Association and its 42 member manufacturers to stop the 'conspiracy' by which they have been fixing prices of paper sold to the government and private purchasers.

The commission published a long list of 'practices' used by the paper companies to fix identical prices, in violation of the anti-trust laws.

Business men are fond of praising 'free competitive enterprise.' Paper Merchant Walsh tried it and found they do not mean what they say.

The paper manufacturers 'refused to fill his order' for the paper he sold to the

government, although the 1 percent reduction was to come out of his commission and they would have received their regular price.

Thus the paper manufacturers punished Walsh for daring to try free competition. This is only one 'example' of their methods, the F.T.C. says.—*Labor*, July 14, 1945.

'Monopolies are themselves not only irresponsive to change, but through their control of basic patents and improvements, and also of kindred patents, only a few of which they utilize or develop, they prevent others from making technological changes in the fields which they preempt.'—*Technological Trends and National Policy*, page 63, a report of the National Resources Committee, 1937.

'The primary duty of managers and directors is to do their utmost so to employ capital that it will yield the most satisfactory return possible. They were not elected to be philanthropists at the expense of security owners. They were chosen for their business ability to administer affairs in a businesslike, profitable way.'—B. C. Forbes, March 21, 1935.

In the Question Box

By Speakers' Division 8741-1

Could a Price System continue to exist if it were operated without profit? E.G.N.

Theoretically, yes. A Price System can exist and be operated without profit. However, the term 'profit system' is not synonymous with the term Price System. The concept of profit is only one part of the Price System.

The elimination of profit in a Price System does not axiomatically abrogate the Price System. On the other hand, the abolition of the Price System renders the collection of a profit impossible because the vehicle of commodity evaluation of exchange no longer exists. Pricing exists not primarily because of profit but because it is an integral part of the exchange of commodities by methods of evaluation.

Under state capitalism the State takes all the profit but it is still a Price System. One could argue that the state might return the profit to the people in various ways, thereby, in effect, abolishing profit. In that case why bother to extract profit at all. It is a roundabout method of attempting to effect distribution.

The function of a Price System is to buy and sell, i.e., exchange. It is not possible to use the tools of an exchange system to operate a system of distribution. *Exchange* and *Distribution* are two entirely different functions. If you want to buy and sell, you have to have money, price and the concept of value. Your money must have characteristics which suit it to act as a medium of exchange. It must be variable, bear interest, be capable of being saved, be negotiable, etc. In short, the entire set up of your system of exchange must be arranged so that it can be manipulated.

Trying to effect distribution with these Price System methods is hopeless. There are too many ifs, ands, and buts involved. There are too many loopholes in a Price System for a clever chiseler to find ways to beat the rules.

If you want to *distribute* goods and services, you have to use operating methods suitable for that purpose. You are now dealing with an entirely different proposition. You must abandon the concept of exchange value and price and the use of money. Your system must be set up along engineering lines to Distribute. Profit is impossible in that set up.

If that's what you want, why don't you Investigate Technocracy?

If we lend to other Nations money with which to purchase goods from us without demanding payment, isn't it possible to keep our beloved Price System and also create the 60,000,000 jobs we so ardently desire.—
J.C.H.

What you are proposing is to give North America's substance away to the rest of the world. If that course is followed, you will not get 60,000,000 jobs but an entire Continent reduced to a coolie standard of living. If we do that, we will keep the Price System all right. We will do even better. We will institute a worldwide system of fascism. If you have eight apples and eight men and you distribute the apples equally, each man will get one apple. Now, bring in 24 more men until you have 32. Then you only have a quarter of an apple for each man. Catch on?

Distribute North America's abundance among the rest of the world,

and you bring about Natural Scarcity everywhere. Then all you have to do is clamp down on technology, and you have world-wide fascism. Nothing is solved, but you have succeeded in turning the clock of civilization backward. That, in essence, is what is being attempted now. Giving away North America's abundance will not solve the world's social and economic problems. The only way to do that is to scrap the Price System here first. Then, by precept, example and more technology, it will be possible to attain a higher civilization everywhere.

What's to keep *Technocracy* from becoming a dictatorship?—
A.P.S.

The factors that will make a dictatorship impossible in a Technate are the absence of political and economic power, and the engineering character of the system itself. There can be no such thing as dictatorship in any purely functional setup. Who is the dictator in a power house? Who is the dictator in a telephone system? Who dictates on a railroad, the engineer? No, he follows orders. The Conductor? No, he also follows orders. The dispatcher? Let him try it just once and trains will be piling up all over his division.

Dictatorship is a phenomena arising in any political, economic or ecclesiastical setup. It is a part of the Price System. The only dictators in a power distribution system, a telephone system, or a railroad, or anywhere else in modern industrial civilization are the financial, political and ecclesiastical overlords. They dictate how much or how little of the good things of life shall be allowed to trickle down to the people and at what Price. They dictate what you eat, what you wear, what you think, how you believe, and practically everything else that happens to you from birth to death. It's

a strange slave who can't hear the clank of his own chains.

Scrap the political, financial and ecclesiastical superstructure over our Power Age culture in North America, reorganize it along engineering lines according to functional principles, and dictators will become as scarce as dodos. Even then, however, if in order to be happy, you have to be a little dictator, or at least see one once in a while, the Technate will go all out to oblige you. It will reserve a sanitary padded cell for you where you may parade up and down, playing Napoleon, Hitler or any other type of dictator you prefer. In that place, however, and in no others, will dictatorship be tolerated.

Hasn't the President the power to establish Total Conscription, and that it is only necessary for people to demand that he so act?
—U.D.W.

In time of war, it is likely that the President could install Total Conscription by executive order. In time of peace, it is probable that Congress would have to do it. The President is given many extraordinary powers during wartime which are usually withdrawn, or terminate, when the war is over. The last half of your question is still valid, however.

If the American people want Total Conscription, it is necessary only that they demand it from the government. The American Government will do whatever the people want. So will any other Government, if the people want a thing bad enough. This fact has been demonstrated many times in history. The pressure of events brought about by the impact of technology upon the Price System grows greater all the time. The dilemma of the Power Age becomes more insoluble as we go into the postwar era. It is a

physical impossibility for the Price System to solve our social problems today. Further, it is impossible for it to escape the necessity of facing up to those problems much longer.

When that day arrives, and it won't be long now, it will be necessary to install Total Conscription of Men, Machines, Materiel and Money, with National Service from All and Profits to None. When the great, impending crisis breaks, it will be absolutely essen-

tial to have an orderly transitional device to get from the chaos of the Price System to the higher civilization America is destined to move into. That transitional device is Total Conscription. It cannot be done any other way. When we, as a people, have safely bridged the gap 'from here to there,' we can scrap Total Conscription. It will have fulfilled its purpose. It will not be needed in the Technate of North America.

Captains of Industry

'These great organizations are constitutionally unprogressive. They will not take on the big thing. Take the gas companies of this country; they would not touch the electric light. Take the telegraph company, the Western Union Telegraph Co., they would not touch the telephone. Neither the telephone company nor the telegraph company would touch wireless telegraphy . . . it was necessary in each one of these instances in order to promote these great and revolutionizing inventions, to take entirely new capital.'—Louis D. Brandeis before the Oldfield Hearing on Patents in 1912.

'It is a well known fact that modern trade combinations tend strongly toward constancy of processes and products, and by their very nature are opposed to new processes and new products originated by independent inventors; and hence tend to restrain competition in the development and sale of patents and patent rights; and consequently tend to discourage independent inventive thought.'—F. L. Vaughan in *Economics of Our Patent System*, 1925.

The automobile self-starter was invented in 1899 but automobile manufacturers resisted its adoption successfully for 20 years. By 1912 less than 5 per cent of cars were fitted with self-starters as standard equipment.—R. C. Epstein in *The Automobile Industry*, 1928.

'I have even seen the lines of progress that were most promising for the public benefit, wholly neglected or positively forbidden just because they might revolutionize the industry. We have no right to expect a corporation to cut its own throat from purely eleemosynary motives. Why should a corporation spend its earnings and deprive its stockholders of dividends to develop something that will upset its own market or junk all its present equipment.'—William M. Grosvenor, in an article *The Seeds of Progress in Chemical Markets*, 1929.

'Technical progress far outruns actual practice. This margin of nonuse is in part due to nonpecuniary factors, but the major explanation is simply that, on the whole, industry must be conducted with profits as the immediate goal; hence the first and major consideration in any choice of method is not merely, Will it do the work? but also, Will it pay?'—Harry Jerome in *Mechanization in Industry*, published by National Bureau of Economic Research, 1934.

In Donegal, Ireland, as late as 1821 wheeled carts to carry produce to market were rejected as useless. They still used creels on ponies' backs.—John Hamilton in *Sixty Years Experience as an Irish Landlord*.

Acrostic on Technocracy Inc.

- T**o discount emotions, opinions, personalities and traditions and place a premium upon cause and effect factors in my social and industrial relationships.
- E**mphasize an attitude of intelligible criticism including self-criticism, exercising open-mindedness and suspended judgment, thus avoiding excessive egotism, altruism or dogmatism.
- C**ondition myself to be accurate in observation, calculation, operation and report, so that my resulting conclusions will be correct and convey understanding in place of confusion.
- H**old no distinction of race, creed or color and place no moral blame against any group or individual but always lay bare the Price System conditioning processes that underly all actions.
- N**ullify all unscientific attitudes and conclusions wherever encountered, by subjecting them to objective analysis with unvarnished facts and evidence.
- O**ppose all compromise with the Price System and its shabby concepts, exposing both those who uphold it and those who would overthrow it as being alike functionally incompetent.
- C**ontinually point out that the paramount concern of the social state is the welfare of the human components involved, and that this must be achieved by designed direction along functional lines.
- R**ead and study Technocracy's analysis and synthesis exhaustively, so that I may understand my country's problems and be qualified to act as a teacher of my fellow citizens.
- A**mericanize my thinking and behavior patterns along functional lines in conformity with the technological nature of American civilization and reject all philosophic and political social ideologies, foreign or domestic.
- C**onvert my spare time and physical energy into use forms for Technocracy Inc., by active functioning within the mechanism of the Organization
- Y**ield to no man in my devotion to my country and my concern for its greater destiny; and stand ready at all times to help liquidate its enemies wherever they may be found, on or off this Continent.
- I**n this present emergency confronting America, I will do all in my power to urge the adoption of Technocracy's program of Total Mobilization for Total Peace, with National Service from all and Profit to None, in place of the present muddling of Price System methods of operation.
- N**ever relaxing my efforts to put forward Technocracy's Victory Program by all legitimate means, I will serve in any way possible to help my country solve its social problems scientifically, thus warding off the probability of fascism, communism, or chaos on this Continent.
- C**onceiving no higher cause, I will never falter in my loyalty to America, my allegiance to Technocracy. By doing this in word, thought and deed, I and many more like me will assure the security of America today and the certain arrival of the functional New America of Tomorrow,

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'Armed with experiment and calculation, science must not be content with facts. It wants to find out the laws, the causes.'—Roger Bacon, 1214-1294.

'Experiment is the interpreter of the artifices of Nature. It is never wrong, but our judgment is sometime deceived, because we are expecting results which experiment refuses to give.' —Leonardo Da Vinci, 1452-1519.

'The great story of knowledge called technology is a legacy from the past, enriched by current history. It is a bequest to the future.'—Homer T. Bone (Dem. Wash.) in *Progressive*, January 31, 1944.

'Politics is the art of looking for trouble, finding it everywhere, diagnosing it wrongly, and applying unsuitable remedies.' Ernest Bevin, Foreign Secretary of England in the *Washington News Digest*, November 1945:

STATEMENT OF THE OWNERSHIP, MANAGEMENT, CIRCULATION, ETC., REQUIRED BY THE ACTS OF CONGRESS OF AUGUST 24, 1912, AND MARCH 3, 1933.

OF GREAT LAKES TECHNOCRAT, published bi-monthly at Chicago, Illinois, for October 1, 1945.
 STATE OF ILLINOIS } ss.
 COUNTY OF COOK }

Before me, a Notary Public, in and for the State and county aforesaid, personally appeared R. B. Langan, who having been duly sworn according to law, deposes and says that he is the Editor of the GREAT LAKES TECHNOCRAT, and that the following is, to the best of his knowledge and belief, a true statement of the ownership, management (and if a daily paper, the circulation), etc., of the aforesaid publication for the date shown in the above caption, required by the act of August 24 1912, as amended by the Act of March 3, 1933, embodied in section 537, Postal Laws and Regulations, printed on the reverse of this form, to wit:

1. That the names and addresses of the publisher, editor, managing editor and business managers are:

Publisher--Section 1, R. D. 8741 Technocracy Inc., 3178 N. Clark St. Chicago 14, Illinois.

Editor--R. B. Langan, 3178 N. Clark St., Chicago 14, Illinois.

Business Managers--None.

2. That the owner is: (If owned by a corporation, its name and address must be stated and also immediately thereunder the names and addresses of stockholders owning or holding one percent or more of total amount of stock. If not owned by a corporation, the names and addresses of the individual owners must be given. If owned by a firm, company, or other unincorporated concern, its name and address, as well as those of each individual member, must be given.)

Section 1, R. D. 8741 Technocracy Inc., 3178 N. Clark St., Chicago 14, Illinois, which is a chartered unit of Technocracy Inc., Continental Headquarters at 155 E. 44th Street, New York 17, New York, a non-profit, membership, educational organization, with no stock or stockholders. The Officers of Section 1, R. D., are: O. Floyd, Director; V. Alexander, Secretary; R. C. Starck, Chief of Staff; E. Nelson, Treasurer all with addresses at 3178 N. Clark St., Chicago 14, Illinois.

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ROBERT B. LANGAN.

Sworn to and subscribed before me this 25th day of September, 1945.

G. A. PRODRAMOS,
 Notary Public.

(My Commission expires June 16, 1947.)

Some Technocracy Section addresses in Great Lakes area

- 8040-1—204 Columbia Bldg., Pittsburgh, Pa.
- 8040-2—Box 356, Ambridge, Pa.
- 8040-3—340 Brighton Ave., Rochester, Pa.
- 8041-1—1613 East 51st St., Ashtabula, Ohio.
- 8141-3—39 E. Market St., Akron, Ohio.
- 8141-4—2237 Front St., Cuyahoga Falls, Ohio.
- 8141-7—P. O. Box 270, Barberton, O.
- 8141-14—P. O. Box 553, Kent, Ohio.
- 8141-15—10537 St. Claire Ave., Cleveland 8, Ohio.
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- 9038-1—4518 Delmar Blvd., St. Louis, Mo.
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- R. D. 9140—18 N. 5th St., Keokuk, Iowa.
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- R. D. 9344—527 Wabasha St., St. Paul 2, Minn.
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- 9648-1—P. O. Box 178, Warren, Minn.
- R. D. 9737—4442 Bayley, Wichita 9, Kan.

TECHNOCRACY

NORTH AMERICA'S ONLY SOCIAL DYNAMIC

WHAT?

★ Technocracy is the only North American social movement with a North American program which has become widespread on this continent. It has no affiliation with any other organization, group or association either in North America or elsewhere.

★ The basic unit of Technocracy is the chartered Section consisting of a minimum of 25 members and running up to several hundred.

★ It is not a commercial organization or a political party; it has no financial subsidy or endowment and has no debts. Technocracy is supported entirely by the dues and donations of its own members. The widespread membership activities of Technocracy are performed voluntarily; no royalties, commissions or bonuses are paid, and only a small full-time staff receives subsistence allowances. The annual dues are \$6.00 which are paid by the member to his local Section.

★ Members wear the chromium and vermilion insignia of Technocracy—the Monad, an ancient generic symbol signifying balance.

WHERE?

★ There are units and members of Technocracy in almost every State in the U. S. and in all Provinces in Canada, and in addition there are members in Alaska, Hawaii, Panama, Puerto Rico and in numerous other places with the Armed Forces.

★ Members of Technocracy are glad to travel many miles to discuss Technocracy's Victory Program with any interested people and Continental Headquarters will be pleased to inform anyone of the location of the nearest Technocracy unit.

WHEN?

★ Technocracy originated in the winter of 1918-1919 when Howard Scott formed a group of scientists, engineers and economists that became known in 1920 as the Technical Alliance—a research organization. In 1933 it was incorporated under the laws of the State of New York as a non-profit, non-political, non-sectarian membership organization. In 1934, Howard Scott, Director-in-Chief, made his first Continental lecture tour which laid the foundations of the present nation-wide membership organization. Since 1934 Technocracy has grown steadily without any spectacular spurts, revivals, collapses or rebirths. This is in spite of the fact that the press has generally 'held the lid' on Technocracy, until early in 1942 when it made the tremendous 'discovery' that Technocracy had been reborn suddenly full-fledged with all its members, headquarters, etc., in full swing!

WHO?

★ Technocracy was built in North America by North Americans. It is composed of North American citizens of all walks of life, Technocracy's membership is a composite of all the occupations, economic levels, races and religions which make up this continent. Membership is open only to North American citizens. Aliens, Asiatics and politicians are not eligible. (By politicians is meant those holding elective political office or active office in any political party.)

★ Doctor, lawyer, storekeeper, farmer, mechanic, teacher, preacher or housewife—as long as you are a patriotic North American—you are welcome in Technocracy.

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Like Tennyson's Brook

The Day Before The Day Before Yesterday

'It is a melancholy truth, that a suppression of the press could not more completely deprive the nation of its benefits, than is done by its abandoned prostitution to falsehood. Nothing can now be believed which is seen in a newspaper. Truth itself becomes suspicious by being put into that polluted vehicle.' (Thomas Jefferson (1743-1826) 3rd President of the United States, in 1807)

The Day Before Yesterday

'There is no such thing in America as an independent press, unless it is in the country towns. There is not one of you who dares to write his honest opinion, and if you did, you know beforehand, it would not appear in print.

'Any of you who would be so foolish would be out on the street looking for another job.

'The business of the New York journalist is to destroy the truth, to lie outright, to pervert, to vilify, to fawn at the feet of Mammon and to sell his race and his country for his daily bread.

'You know this and I know it, and therefore what folly it is to be toasting "an independent press."

'We are tools and vassals of rich men behind the scenes. We are the jumping jacks. They pull the strings.'

John Swinton (1829-1901) chief of the editorial staff, NEW YORK TIMES, 1860-1870; editorial writer and chief of Staff, NEW YORK SUN, 1875-1883; to a gathering of newspaper men in the latter part of the 19th Century.

Yesterday

'The newspaper is a manufacturing concern producing goods to sell at a profit; it is also a department store, and it has some characteristics that suggest the variety show. . . . But the newspaper differs from all other commodities in that it does not live by what it receives from the consumer who buys it. Three cents multiplied a million times does not support a newspaper. The valuable part of a newspaper from the manufacturer's point of view, and also to a great extent from the reader's point of view, is the advertisements. The columns of 'reading matter,' so-called, are little more than bait to attract enough readers to make the paper worth while as a vehicle for advertisements.' (John Macy (1877-1932) in the chapter on Journalism in CIVILIZATION IN THE UNITED STATES, edited by H. E. Stearns, 1922.)

Today

'I have been a newspaper man for 40 years and out of that experience I have drawn conclusions that don't exactly match with the self-adulation being proclaimed in American editorial pages this week.

'Out of my experience I have reason to believe that too often, where the interests of the many are on one side and the interests of the privileged few on the other, the newspapers line up with the privileged and powerful few.

'Indeed, the press in this country has become the ally of the entrenched economic order that has been built up around monopoly capitalism.'—(William T. Evjue, publisher of THE CAPITAL TIMES, Madison, Wisconsin (in his paper during the week of National Newspaper Week, 1945.)

Tomorrow



GREAT LAKES TECHNOCRAT

March - April - 1946
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MARCH-APRIL, 1946 ★ VOL. III ★ NO. 9 ★ WHOLE NO. 78

Illustrating the Futility of Price System Methods of Operation; Interpreting the Trend of Events from the Social Aspects of Science; and Presenting the Specifications for Total Mobilization for Peace!

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TECHNOCRACY LITERATURE

MAGAZINES

Technocracy,

155 East 44th St., New York 17, N. Y. 15 cents, no subscriptions.

The Technocrat,

8113 S. Vermont Ave., Los Angeles 44, Calif. 15 cents, \$1.50 for 12 issues.

Northwest Technocrat,

813 Pine Street, Seattle 1, Wash., 15 cents, \$1.50 for 12 issues.

Technocratic America

R. R. No. 2, Box 110, Fontana, Calif., 5 cents, 50 cents for 12 issues.

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TECHNOCRACY DIGEST

625 W. Pender Street



219

Vancouver, B. C., Canada

Roll Your Own, Joe!

America Has Plenty of Makings

A Treatise for the Guidance of those Aspiring to Live Off
the Sweat of the Other Fellow's Brow. Quick and Easy
Method—How to Organize—How to Operate.

By H. V. Wilkie, 8342-1

In these postwar days there is a great deal of 'study being given to the subject of accumulating data and suggestions on a variety of business enterprises from which returning soldiers, or any one who happens to be looking over their shoulder, can get himself set up in something neat and attractive in the chiseling line. This 'down to earth' study for the aspiring ex-G.I. (and the guy looking over his shoulder) avoids all the customary moral, political and economic balderdash with which other 'studies' are loaded. It goes straight to the point, i.e., 'In what line will it be the easiest for me to chisel the most out of society and at the same time get away with giving back the least in return?'

That is the genuine spirit of 'free enterprise.' Why waste time clouding the issue or trying to camouflage the 'take?' In these few remaining 'latter days' of the Price System, a guy has got to get on the beam quick if he wants to belong to the blessed, microscopic minority who rest so softly on top of the social dung heap. Ain't it a fact?

What's Your Racket, Bub?

For the earnest student wishing to learn how to go about breaking into the charmed circle, nothing could be more helpful than to take a look at the methods and accomplishments of others. If you can establish a control over something that people can't live without, you have what is technically known as a 'red hot.' Next in line of descent would be control of what they think they can't live without. Then, what you can make them think they can't do without. After that, what will give them amusement or enjoyment. Next, what will protect them from harm. Following that, what you can make them think will protect them from harm. And, lastly, that ancient but still profitable line,

future salvation on a pay now and collect later basis. The above list is fundamental. No attempt has been made to make it exhaustive, or to subdivide the different headings into their many branches and off-shoots.

The name that has come to be most commonly applied to the business of exploiting the profit possibilities in these fields is 'racket.' A nice definition of a racket is: Any operation wherein an individual or group can take a cut off the needs, wants, desires or fears of their neighbors. Rackets have flourished proportionately with the growth in complexity of the social structure. In examining some prominent examples, the order in which they are presented need be no indication of their seniority.

Food, being necessary to life, constitutes a very meaty racket, and is referred to as 'a honey.' This is called the 'food racket' among the boys who congregate around the terminal warehouses. In this same category are clothing, shelter, health, education, transportation, communication, etc. The items people think they can't do without vary with customs, seasons and traditions. A good example of what you can make them think they can't do without is the current ballyhoo on vitamins. The list is long but this example suffices. And so on through the various categories.

From the simple process of supplying the primary needs of the earliest groups of people, there evolved such big operations as Standard Brands, Uneeda Biscuit, American Woolen, American Sugar, U.S. Rubber, Standard Oil, etc. The technique of all these operations is to make the package neat and attractive and pass out as small an amount of utility as possible for as great a price as the traffic will bear. Generally speaking, if it were possible to sell empty packages with no utility whatsoever, there would be no broken corporate hearts.

Let's Look the Field Over

In the matter of selling future salvation, one of our most honored activities, the field is by no means exhausted with the well-established institutions. It is a dull day when some one somewhere doesn't bring out a new brand of salvation with varying degrees of success. To become a 'New Messiah' or "Seventh Angel" requires only a vacant store, some sex appeal, the guts of a brass monkey and plenty of imagination.

Along with the growth of the salvation and subsistence business, there also developed what is known as the

'Service' occupation. This is a field of absolutely unlimited opportunity. Any new way that you can think of for doing something in this complex social maze of ours which people are too indolent, bewildered, busy or afraid to do for themselves, is bound to ring the bell. Many examples of how this luscious racket operates can be given. The lawyer can extract anywhere from one hundred dollars to a thousand dollars for drawing up a simple bill of divorce, sending a will over to probate, or thousands of other little acts that seem mysterious and amazing.

The legal profession has the charming attribute of dealing with people at a time when they are peculiarly helpless and emotionally befuddled. Thus the hapless victim finds himself with his life, his reputation, but more particularly his wordly goods, at its complete mercy. Think quickly, how many lawyers do you know who have lived a life of ease just milking one estate, or drawing up ironclad contracts for one corporation, or breaking ironclad contracts for another.

This is a range of opportunity limited only by the imagination of the operator. Since practicing (?) the 'law' unfolds such prizes, what more natural than to move in on the prerogative of making the law? No wonder Congress is often called a Soviet of lawyers.

Let Us Prey, Brethren!

Hush ye merry men in your rollicking! Have ye no hearts? Let us give thanks to the author of such beneficence! But who is the author? Surely we need another patron Saint in the calendar. Who should it be but Beelzebub himself, who leads men's feet astray and into our mystic maze? Nay, wait, the name's ob-

scure, let's shorten it to Boob. That's it—St. Boob—the author and founder of our art, for where would we be were it not for the great American Boob.

The lure here is admittedly dazzling but the competition is stiff and only the stout hearted get a firm seat on this bandwagon. A major output of all public and especially parochial colleges are contestants in this juicy plum department. Such endowed institutions specialize in turning out double-edged sharpies who swing a mean blade in the legal joustings. They are also properly indoctrinated to bridge the gap leading to ecclesiastical dominance in the educational field.

Sweetest Racket of All

Somewhere in the Elysian Fields there sits a king wearing a crown, a ten-pointed crown adorned with dazzling jewels. This king sits in eternal bliss, strumming the strings of a golden harp and humming softly the while, his whole being bathed in the sunshine of perfect content.

He invented the insurance racket! Ah me! 'Why didn't I think of that?' The dream that plagues the heart of every free aspiring free enterpriser is the dream of a racket operated on a 100 percent nothing for something basis. Rating high in this category are the Labor Union, the Pressure Group, Charity, Bootlegging, Hi-Jacking, Murder, Inc., and so on. One great drawback with many items in this bracket is that they are frowned on by the legal gents we have visited just above. They demand an inordinately heavy cut out of the pickings and even play rough, to the extent that occasionally some of the more vulgar and less accomplished operators find themselves in the 'Hoose Gow' or on the 'hot seat.'

Not so with the insurance game. It is respectable. It is staffed with gents who are polished and adroit. In its inception it ranked with the Confidence and Badger Games in what we righteously call 'outright swindles' and its great field was the uncultured and uncouth. The technique in the early stages was to keep practically all of the 'take' with only an occasional pay back of a few shekels with great publicity, just to sweeten up the pot. In their advertising today, the offspring of these lusty buccaneers use a hangover of the same tactics. They ballyhoo loudly how much they have paid back to the policy holders in the last forty years, or graphically depict their agent paying off poor widow Brown the thousand dollars that saved her from a life of shame.

This high spirited and carefree method went along swimmingly until a little after 1900 when *Collier's Weekly* with its expose, plus the Kemble cartoons, threw a cold analytical eye not only on insurance but on the food and drug rackets as well. The newspapers took it up and the resultant din stung our lawmakers into framing a batch of statutes, laying an even heavier hand on the practice of corporate vice.

It was thus, my kiddies, that thousands of our now most respected business institutions had a sudden change of heart, forsaking the black flag of piracy for the lacy mantle of 'free enterprise.' By assiduous application of the chiselers' ingenuity, the new front of chastity yields an even greater bounty than the old. Insurance as a whole now gives back 10 percent, 20 percent or even fifty percent of the 'take' and finds itself the very center of rockribbed respectability. It is still strictly nothing for something, because the only thing they have invested is the effort of selling the

great American Boob the idea that he is not competent to take care of his own money. How would you like to think up a little doosie like that?

A. B. C.'s of Chiseling

At this point, let's examine the fundamentals of 'free enterprise.'

The one basic attribute of business is to gain control of something that somebody else *wants* or needs. A prime consideration is that you will fulfill this *want* only on payment to you of your price. Therefore, the first care of every business man is to see that no one gets something for nothing. Paradoxically the best bait an enterpriser can use to snare fish (shall we say suckers) into his commercial net is to infer or even declare that he is passing out something for nothing. The insatiable appetite of the Great American Boob for this kind of bait explains the undiminished prosperity of the numbers racket, gambling, fire sales, auctions and Friday bargains, not forgetting to mention Bingo, the darling of every parish priest.

There are several schools of thought on the subject of just how to ooze, squeeze, inject or force oneself into a position of control and its concomitant of levying tribute, i.e., fee, profit, split, rake off, shakedown. Many favor the direct action method of simply moving in and taking over. This sometimes requires a little rough work, for which, fortunately, there is usually a plentiful supply of dim-witted plug-uglies. This method gained a quiet popularity as the social picture in America gradually congealed, and the oldfashioned flim-flam, three card monte and stock swindle, those sucker trimming rackets of an expanding economy ran out their string.

Prohibition, and the consequent

heavy booty available through supplying illicit liquor for illicit thirsts, provided a romantic outlet for the initiative of folks subscribing to the direct action school of thought. This activity also was popular with police, custom and internal revenue agents throughout the land. Many a deserving public servant now leads a life of peaceful retirement today in some quiet nook or (due to lead poisoning) reposes with his ancestors, depending largely on how skillful he was in estimating the size of the bite from which he could separate the prime operators.

'Do It First and Do It Often'

Regardless of one's individual viewpoint, it must be admitted that for sheer initiative, these enterprisers have seldom been excelled. Bootlegging, although a fairly substantial objective in itself, served also as a springboard for leaping into almost every conceivable kind of profitable commercial activity. Of course these rough and ready entrepreneurs dispensed with the usual preliminaries of opening up shop and cultivating a patronage. Wherever their eyes lit on a successful nightclub, labor union, string of bawdy houses, hat check concession, taxi stand, private detective agency, protective association or sales agent, direct action was employed. They politely but firmly invited the occupant to move over, or out. It was a case of either accepting the unrivalled opportunity to acquire a highly functional partner or becoming an ex-proprietor. The fate of those who demurred only served to heighten the general impression of high business acumen in accepting such invitations.

Al Capone became the legendary hero in this realm, and after years of hustle and bustle lives in quiet seclusion in a fifty room Florida castle,

complete with private yacht, lakes and all the fixin's. Al was out of circulation for a little while due to a little miscalculation about cutting the Washington boys in on his 'take.' He learned that it is bad business to hold out on these past masters in the gentle art of the shakedown.

The above is offered as analysis only, and not necessarily for emulation, because this field is fairly well nailed down by rugged individualists whose habit it is to forcefully repel intrusion. This does, not, however, slam the door of opportunity on private enterprise, since every little while there emerges some clever new device for putting on the squeeze.

Closely akin to such extra-legal activities, and not to be overlooked by the diligent student of ways and means, is the law enforcement angle. Since all human law is a species of blackmail ('you do what I say or else'), it is no more than natural that law enforcement should come to be by lineal descent the daddy of all shakedown rackets. No analysis is required here, since it must be self-evident that no commercialized vice can exist without the implicit consent of that branch of the constabulary whose business specifically is to prohibit such nefarious practices in a given area.

Since our purpose is to suggest some sort of satisfactory occupation to ex-members of the Armed Forces or any one else seeking a few fatherly hints on the facts of 'free enterprise,' let's glance at a few more intriguing devices for accumulating exchangeable currency before we proceed to examine a few probable solutions to the problem.

Whet Your Appetite on This!

From a simple printed notice of the arrival of a shipload of goods or

the offer to buy or sell a cow evolved that rose-colored world within a world, the advertising business. It is elementary that merchants even 'away back when' should find these notices more effective in luring the gullible when garnished with a little stretching of the truth or a few intimations not strictly in line with the facts. This lesson learned, it was only a few easy steps until these notices began to dominate the pages of every periodical published, not to mention fence posts, tree trunks, barns, out-houses, etc.

Now here is the point for the sharp student to grasp. Some bright boy went to the publishers and told them he could greatly increase their advertising patronage if they would give him a 15 percent discount on all ads placed by him. He then went to the merchants or manufacturers and told them he would make market surveys, edit and prepare copy and all sorts of other services (all for nothing) if they would turn over to him the prerogative of placing their advertising. Since the more space he could induce his clients to buy, the more commission he collected from the publishers, he put himself in the middle of some very handsome pickings. He was the father of the advertising agency. Thus was a forced draft put under the business of making 'everybody on Earth dissatisfied and wanting something else.'

The fact that publishers quickly learned their real business was the distribution of advertising is not surprising, when it is noted that the revenue from display space far exceeds all other income. If, in carrying on this business, they find it convenient to suppress or distort news or information offensive to advertisers, we should not be too hasty in condemnation for

what we don't know probably won't hurt us anyhow.

Bounteous Bereavement

When this fleshy structure we call the body parts company with its soul, mind, or spirit or whatever we choose to call the Life principle, the resultant mass is known in trade parlance as a cadaver. Its tendency to decay and become obnoxious poses a problem open to a number of solutions. If the environment abounds with scavenger birds or animals, removal of the remains to a sufficient distance to permit these brethren to perform their happy rites, offers a satisfactory disposal with a minimum of effort. Otherwise, burial in the ground or consumption by fire are indicated. At sea, of course, the solution is obvious. All this would have no place in our observations had we not somewhere along the line built up a set of sentimental and superstitious notions concerning the relic of the dear departed. Free Enterprise, quick to sense a golden opportunity, quickly capitalized on this condition by endowing this very necessary disposal with an endless system of rites, ceremonies, trappings and memorials.

The woodworkers, cement, metal, cloth and chemical trades, the florists, printers, stone-cutters, tent makers, auto builders, clergy, plus and double plus the mortician, all take a cut. Even the doctor gets a final fee for a death certificate. This is small enough recompense perhaps for the loss of a solid source of revenue. The innovations in this line have been endless, which should spell opportunity to the aggressive young man with a little imagination and less inhibitions.

Once Over Lightly

Since it is our intent to acquaint ourselves with the general technique

of profitable under takings by scrutinizing a few of them so as to get the hang of things, we should not overlook such steady producers as banking, blackmail, counterfeiting, small loans, money exchanging, etc. Because of the all too present temptation to become poisoned by one's own product, the Booze and Cigarette (plus others tobacco products) rackets have been by-passed. We might note that they employ several hundred thousand persons and several billion dollars of capital in their entirety. In spite of the fact that their entire contribution to the public weal is on the negative side of moral, mental, and physical depravity and disintegration, they are highly regarded socially because their very noxious status makes them open season game for the tax leviers. Because of this they are unwillingly the heaviest contributors to many a state, city and national budget. Temperance and moral uplifters work up hill all the way when they try to kill off the goose that lays this golden egg.

In an early paragraph we touched upon the principles of manufacturing, which can be reduced to the individual producing (as cheaply as possible) something that has eye or gadget appeal and vending it to the surrounding country side.

Not to be overlooked in a survey of this sort is the acquisition of special skills which folks will pay to see or hear you exhibit. Hence, the highly skilled art of purveying entertainment. The general principle of show business is analogous to peeking through the keyhole while someone undresses. For a consideration at the box office, we are permitted to view peoples' most sacred and secret emotions and in the right houses most of their epidermis too. The highway to success along this avenue

is piled high with the blanched bones of hams who saw only a shortcut to fame and fortune, and failed to note the days, hours and years of study, practice and development required for success.

Include Me Out

We could go on like this indefinitely, analyzing rackets and passing out valuable pointers. The list is much too long, however. There is just one further point we would like to call to your attention. That is the real difference between a racket and a legitimate business. The racketeer takes over a line, then builds it into a monopoly; after that he gets himself a private army to brush off and/or rub out competition.

In a so-called legitimate line, the entrepreneur builds up a business. Then he builds a fence around it with high prices, restricted production, buried patents, monopoly control and cartel agreements seasoned with political and legalistic legerdemain. So we see that the real difference between racketeering and good old 'free enterprise is mainly in refinement of methods and who got there first.

It could be that we are in error and that you are not really as keen about climbing aboard some passing racket as the ballyhoo would lead us to believe. When you see the hazy and backhanded way your Government approaches the idea of giving you a lift into business, you might almost think they don't want you there. But then the best they could offer the heroes of the last war was the thinly disguised beggary of selling apples on a corner! Maybe if we simply peeled off a few layers of bad conditioning, weird notions and false concepts, and took a factual look at our environment, we would not fancy

ourselves indulging in any of the behavior patterns we have just examined.

How About The Real McCoy?

In a spirit of adventure, let us suppose that we are going to investigate the real probabilities of our position in the America of the future. After the manner of Columbus, let us turn our backs resolutely on every preconceived notion and let the facts announce themselves as they appear one by one over the horizon of our awakened consciousness.

Turning away from the zany psychological jumble of greed, chaos, absurdity and idiocy which we call politics, finance and business, and training our mental binoculars on our actual physical environment, what do we see? First, we see a land whose fields, forests, mountains and streams possess natural and energy resources equal to the known resources of most of the rest of the world. Wow! The North American Continent has only 10 percent of the world's population and the lion's share of the world's resources. That sounds like luxury! And why not, because the next thing we see is a high energy social pattern, with the installed technology, the engineering skill and the trained personnel capable of producing all the goods and services every American can conveniently consume. A potential abundance is here now, for all.

Let's make believe just a little more, and suppose that we should put these resources and this equipment to use for the purpose for which it is logically intended, i.e., consumption. Today they are used to entrench and maintain a galaxy of anarchistic rackets, each preying on the other, and all leeching on the whole of society.

Is that the limit of human intelligence? Have we gone thus far and struck a dead end? Can't we conceive of ourselves as sufficiently sane to use our resources for the simple physical act of producing and distributing the abundance they portend? Let's go whole hog on this make believe game and suppose that we have enough sense to do just this! Then how would we go about it?

Since this is a physical and not a political or financial sandbagging problem, we would be forced to employ the only method we know for treating physical problems. We would have to use the methods of physical science. Here the one constant is measurement. Using this means, we would find that if we operated our productive capacity on a balanced load basis, we could use only the physical services of our adult manpower four hours a day, four days a week. This is enough work to produce and distribute to every individual resident of this North American Continent all the goods and services he or she can consume.

Accept No Substitutes

Let's get this clearly. *There is no physical reason why any American should be deprived of anything reasonably necessary to his complete well being!* That means complete security from birth to death is physically available here and now. The careful scientific analysis of compilation of data on our physical environment which revealed these facts covered a period of fourteen years of painstaking research by the Technical Alliance of North America (later to become Technocracy Inc.). This organization consisted of a number of engineers and scientists who were sufficiently clear-sighted to recognize that the impact of the vast technology and energy

output which we were pouring into our social mechanism must produce social repercussions.

They analyzed also the Rules of the Game of Price System interference control and made at least one startling discovery, i.e., *abundance destroys price*. Any attempt to distribute the technological abundance accumulating on this continent, by Price System methods could only lead to progressive disintegration which if permitted to run unchecked would result in chaotic social collapse.

This analysis is factual. It deals with no ideology, wishful thinking or consensus of moronity opinion. It bears no relation to the business and political tripe which the great American Boob is conditioned to gulp down in gargantuan doses without question. It is substantiated by masses of facts which can be verified by any American. In the light of the rapidly developing social instability, the program of Technocracy should be investigated by every American.

IT'S UP TO YOU, JOE

All this brings us rather squarely to the moment of decision. If we look the facts squarely in the face, we find there is a question we must answer. Since the pressure of advancing technology is undermining Business, Politics and Finance, why bother to have any part in the decadent rackets which we have just now so gently touched upon. Let's shoot the works in our make believe and suppose that we go 'all out' to usher in the age of abundance which is knocking so loudly at our door. Then what?

Wouldn't you rather have the abundance and security that can be provided from birth to death for every citizen and that would be guaranteed by the entire power of

the social structure than the dubious dabbling in uncertain rackets that now characterizes this dying economic order. Look at the government's figures on income distribution and you can easily calculate your chances to chisel your way into the blessed minority on top of the social dung heap. The odds are terrific and they get steeper all the time.

Why be a piker in the richest Continent on earth? Why settle for less than the whole hog? Why battle around with cheap perilous rackets

when the greatest land the Sun shines upon is waiting to throw its beneficence into your lap? Face up to the fact that the Price System is on its last legs. The New America of Abundance rises shining with a brilliance almost beyond description just over the threshold. It's a fact, brother,

If you face toward the future instead of the past, you will then be one with that happy band of sturdy pioneers, the Technocrats. They are doing just that. Well, why not? Investigate Technocracy!

Moral: Don't Be A Little Guy

'The very first law passed in 1619 by the Virginia House of Burgesses fixed the price of tobacco—the money of the Colony. Wives and daughters drove into Jamestown with a wagon load of tobacco to do their shopping.

'By 1639 the price of tobacco fell so low that the Burgesses passed a law to burn half the crop. . . . Creditors got 40 pounds for each 100 lbs. of (tobacco) debt.'—From 'The Romance of Money' feature in *The Numismatic Scrapbook Magazine*. (Italics ours)

Metal Pull Toys, the kind children want and can't get, go begging in Chicago. The toys were made by three veterans with a sharp eye on the Christmas trade. But the manufacturers made one mistake. They made the toys too good. Stores, which previously had shown a keen interest, changed their minds when they got a look at the first 20,000 that were turned out. The stores told the veterans they could not afford to take the loss involved in dumping stocks of wooden toys which would become unsalable as soon as the superior metal toys were put on the shelves. (*Wall Street Journal*, December 13, 1945.)

'Trucks and busses aren't wearing out the way they should, the Society of Automotive Engineers was told today at its annual meeting here. The group was told it should prepare "wear" standards to guide fleet managers who are confused by vehicles which run for hundreds of thousands of miles, spurning time, distance and wear.

'Gavin W. Laurie of the Atlantic Refining Co., Philadelphia, said preventive maintenance keeps trucks in safe operating condition for more than a decade and a million miles. He said reasons other than mechanical failure and wear must be found for retiring them.'—(*Chicago Daily News*, January 8, 1946.)

'Sure, when I deliver lectures I say crime doesn't pay. But that's for the little guy. For him, crime doesn't pay. But it's asinine to say crime never pays. I know too much about how some big businesses have been built up. I wouldn't ever say anything as silly as that.'—Joseph R. 'Yellow-Kid' Weil, the veteran international con man (now ex), whose police dossier goes back to 1905. (*Chicago Times*, December 28, 1945.)

The Valor of 'Free Enterprise'

Lets All Play Santa Claus

By Herb Robbins, 8439-1

Oh, Promise Me!

Sixty million jobs! This is the goal of our national leaders in the postwar era, a goal set up by a political promise on the eve of a national election. Well, it seems the promise was taken in good faith by a majority of Americans, who now expect the politicians to deliver. So, all right, that shouldn't be so tough, as it merely depends on what you care to define as a 'job.' The N.A.M. has taken a survey of private manufacturing and business concerns, and reports that we need have no fears in this regard, as industry in the past has always furnished one-fourth of all jobs, and will in postwar times be able to furnish better than one-fourth of 60,000,000 jobs, so there! Just as simple as that.

Reams of paper have been used to print the opinions, views and hallucinations of our tycoons of business, politicians and economists on this subject. No attention, however, is paid to the physical factors which will dictate the outcome of the whole mess. They 'view with alarm' the prospect that 60,000,000 Americans aren't going to be able to work like hell for one-third of their whole day, but fail to give any reason for this stand, other than the fact that 'Free Enterprise' cannot survive otherwise. Shades of Simon Legree! Better get away from that corpse, boys, it's getting ready to blow up in your faces from too much 'pump priming.'

Get wise to yourselves and understand that Technology will dictate the postwar status of 'jobs.' Being a com-

posite of physical phenomena under strict control of physical laws, technology is not amenable to the principles of democracy.

You know, of course, what Technology is. It is well represented in the shiny new machines which have been installed by the thousands in machine tool plants. It is visible to the naked eye in the South, where the new cotton pickers are already at work displacing men, women and children in the fields. You may have driven over some of it in an automobile if you have been on the roadways running over our immense power-dams. You will find it in the steel industry; in the office; in the coal fields; on the farms. Technology, that magnificent instrument of production of physical wealth, has become the dictator of America's destiny. It says to Americans 'Throttle me and you shall starve; operate me and you must find some way to distribute the abundance which I create, for I have replaced your customers.'

Forward, March—To Chaos

Being no respecter of persons, it cares not who holds the title of ownership, for it will work only according to its design and is unaffected by majority votes. What a boon to the Free Enterprisers if their views and hopes could regulate the velocity of Technology in its ever accelerating approach to its pre-determined impact on the rotted corpse of 'business.' If the politicians believe they can provide 'jobs' for the millions of people who have been displaced by Technology in this country, let them remember that these millions will constitute a political

majority, holding the political lives of the politicians in their hands, and they had better be jobs which carry remuneration equal to or better than that provided by private business. Under such conditions, one could improve one's social standing by going on the W.P.A.

Some of the plans to employ 60 million people in America in postwar times have reached that point of desperation wherein the authors can be accused of plotting a conspiracy against the American people tantamount to national treason. Mr. Henry Kaiser, that tycoon of business, recently suggested that America ship all of its rolling stock to war-torn Europe, thus enabling our steel mills and other shops to operate at capacity in replacing this equipment. We suppose that Mr. Kaiser is cognizant of the fact that this is a tremendous tonnage of steel to be taken from our dwindling stock of iron ore. Other propositions are coming across the board in rapid fire order to give America away to all comers. Of course, this will be accomplished through the expedient of making 'loans' to the respective recipients of our 'export humanitarianism.'

The statements of some of our national political and business leaders resound with exhortations to the dear public to 'preserve Free Enterprise' or we are lost. What a damning indictment of democracy this must be to the millions of men in our Armed Forces, who fought and died all over the world to defeat the military might of Fascism, to realize that our own fascist elements at home are planning to give away (for free) the resources which the foreign fascists have been planning for years to grab by force. This is to be done at the expense of American taxpayers, American living standards. We cannot slice our cake that thin without also eating a thin slice. It is

quite the time for Americans to regard national wealth in its correct aspect, for we are going to look mighty silly sitting here on a Continent denuded of oil, iron and other metals, each clutching in his hands a bundle of debt certificates, payable on demand or at some future date. What the hell do these monkeys think a high energy civilization runs on, paper?

Blessed Are The Peacemakers

Sixty million jobs in America will mean 60,000,000 suckers finally reduced to the level of China's 450,000,000 coolies. America's virgin timber is 80 percent gone. Free Enterprise has been here. In order to survive the last two decades in America, Free Enterprise has had to ship out of the country ever-increasing amounts of our natural resources in raw and finished stages, in exchange for gold, and other worthless items, so we could have 'jobs.' Yes, we must have jobs to support the Free Enterprises in their respective rackets of piling up debt claims against the general public, while they beat their breasts and yell 'democracy!' What democracy, may we ask? United States is a Federal Republic, and as such can harbor any form of government by the people of themselves.

We have never approached a democracy in this country, for no ordinary citizen of the great mass of Americans is ever permitted to vote for or against any fundamental issue concerning his or America's welfare. We have, for many years now, been 'sold down the river' by the oligarchs in order to maintain for ourselves that doubtful privilege of competing for an ever diminishing supply of 'jobs.' Faced with a gigantic unpaid leisure class after this war, the only out that the oligarchs can devise is to rehabilitate the world, industrialize the 'backward' nations with our immense surpluses of

machine tools and other technological devices. This is to be done in order to maintain peace in the future. Page Homer Lea and 'The Valor of Ignorance.'

Where are these 'backward' nations to obtain the energy to operate a civilization above that of European peasants? Obviously from us. In what form? Our oil supply has diminished to the point where it is now necessary to 'mine' it by digging a shaft down and under the oil-bearing sands and allowing them to drain through holes drilled upward. In Canada, a method is used whereby exposed beds of oil-bearing sands are steam-jet drilled and broken up to be transported to flotation cells, where the mixture of sands and hot water is forced into the bottom of quiet tanks of water, where the oil rises to the top. The 'black gold' of the Empire

Builders has dwindled to a strategic key resource. If consumption of oil in this country alone is continued at the present rate for much longer, we are not going to have enough to lubricate the machinery needed to install the hydro-electric dams which will be needed to furnish the energy for industrial operation.

Americans cannot ignore these physical factors, if we expect to survive as a nation. There is one way, and one way only, to stop this last wild fling of the Free Enterprisers. Technocracy's program of Total Mobilization for Peace will prevent our irreplaceable natural resources from being shipped out of the country. Shall we lose our national heritage in order that the Free Enterprisers may for a short while maintain the dying Price System?

Investigate Technocracy!

This Guy Is In A Real Mess

Someone had wired a Government bureau asking whether hydrochloric acid could be used to clean a given type of boiler tube. The answer was: 'Uncertainties of reactive processes make use of hydrochloric acid undesirable where alkalinity is involved.' The inquirer wrote back, thanking the bureau for the advice, saying that he guessed he would use hydrochloric acid. The bureau wired him: 'Regretable decision involves uncertainties. Hydrochloric acid will produce submergative invalidating reactions.' Again the man wrote thanking them for their advice, saying that he was glad to know that hydrochloric acid was all right. This time the bureau wired in plain English: 'Hydrochloric acid,' said the telegram, 'will eat hell out of your tubes.'—Camp Livingstone Communique (*Reader's Scope*, January 1946.)

'He weighs 150 pounds, dies at 53 years of age, spends one-third of his life sleeping, is 67 inches tall, has a brain weight of 1,300 grams, and his pulse beats at the rate of 70 a minute. He has a 7,500 word vocabulary, leaves school at the eighth grade, and has a mental age of 14 years. He has a flat chest, round shoulders, and protuberant paunch. He is a mimicking monkey whose wisdom or intelligence is patterned by the copybook maxims of his school days.'—Dr. H. L. Hollingshead, professor of psychology at Columbia University. (As quoted in *The Messenger*, November 1945.)

'At present the ordinary man has the choice between being a wage slave and a scoundrel.' Betty Grable, movie actress (as quoted in the *American Freeman*, March 1946.)

Flashes of American History

No. 1. Shays' Rebellion in 1786

By Ben H. Williams, 8141-15

This is the first of a series of articles which originally appeared in 8141, the predecessor of Great Lakes Technocrat. The series deals with various significant points in the development of the United States as it progressed from a handicraft-agrarian stage to a more complex industrial culture.

The Price System has seen to it that every American is well indoctrinated with the hatchet and cherry tree version of our history. This type of miseducation contributes mightily to the maintenance of the status quo. It's a part of the Propaganda of the Price System.

Maybe, however, you are one who wants to know the right answers. If so, here are some facts of our National History. More will follow. This series consists of glimpses of, and sidelights on, the physical history of America. That is our real story as a nation.

Shays' Rebellion quite properly may be labeled 'the first social upheaval in United States history.'

Like most events of significance in a social sense, its meaning has been largely cast into obscurity, hidden behind the veil of a purely 'political' or an equally one-sided 'personality' approach to historical events. Like all other social disturbances in American history, it was primarily economic in origin, development and outcome. The underlying causes are best made clear by examining briefly the historic setting of the early post-Revolutionary period.

Post-Revolutionary United States

The formal treaty of peace with Great Britain in 1782, found the thirteen American colonies in a demoralized state. Trade with the West Indies and with Europe was at a standstill, with the British blockade still in force. Currency of gold and silver was practically non-existent and the various issues of Continental cur-

rency inflated to the point where one dollar in silver was worth \$120.00 in paper, and taxes had to be paid in hard money. Universal indebtedness based upon pre-war money evaluations added to the difficulty of collecting either interest or principal, while the laws against debtors enabled their creditors to seize their property for any part of the debt, or to remand to prison the debtors themselves until such time as they or their relatives or friends met the obligation.

These laws extended to delinquent taxes as well as to other debts. The concentration of debt claims in the hands of loan and mortgage sharks and speculators in securities in the larger towns and cities brought about antagonism of an acute form between them and thousands of farmers and laborers of the back counties. Most of these farmers and laborers were returned soldiers who had just made America safe for 'life, liberty, and the pursuit of happiness'; who had successfully resisted 'unjust taxation' by Great Britain and now found them-

selves facing debtors' prison for inability to pay 'just taxes' imposed by their fellow patriots. They saw these prisons day by day swallowing up hundreds of their relatives and friends, many of whom died therein of diseases due to overcrowding, insanitation, and starvation. Their farms and homes were mortgaged to greedy security holders, who had legal power not only to take away their property but to slam their persons into prison as well. Employment was impossible to obtain, owing to general industrial and commercial paralysis; while surplus farm crops, unable to find markets, rotted in barns. Contrary to popular notions prevalent at the present day, this was a nearly universal status of the American Republic at the period of its birth and early infancy.

It was no accident that the State of Massachusetts became the stamping ground for that reaction against these conditions known to history as Shays' Rebellion, any more than it was an accident that the early events of the Revolutionary outbreak against Great Britain occurred in the same area. Massachusetts was more advanced in an economic sense than any of the other colonies. Boston was both the largest and most flourishing of the commercial centers. Its merchants and privateersmen had made fortunes in 'rum, molasses, and black ivory' (negro slaves). Fishing, shipping, and ship-building had attained an advanced stage of development up to the outbreak of the Revolutionary war. Manufactories were springing up in Massachusetts to a greater extent than elsewhere in the Colonies. Consequently, the economic paralysis following the war hit that State hardest of all. Massachusetts found her slow yet certain emergence from the ox-cart stage suddenly checked, and re-

acted accordingly. Social action battered at the walls of economic maladjustment.

Origin and Course of the Rebellion

Initial bombardments of the discontented agrarians, from 1782 on, took the form of petitions to the legislatures and courts for a redress of grievances. Remains of the British feudal code, as above indicated, still clung to the jurisprudence of the newborn Republic, while caste lines between elements of the American population were strong. These caste distinctions had not been wiped out by the mere declaration of human equality, nor by the eight years' war for independence. Merchants, money-lenders, and their henchmen the lawyers, sheriffs and bailiffs, were in control of courts and legislatures. Many of these 'big-bugs' not only were in the habit of expressing contempt for the common people in words, but, after the peculiar caste fashion in feudal England in all relationships growing out of trade, employment, and jurisprudence, the common people were studiously treated as inferiors.

Getting no results from petitions, the rising tide of agrarian discontent quickly assumed a more militant form. Lawyers and judges subservient to the money sharks were denounced as enemies of the people. The larger merchants of Boston were condemned as 'importers of luxuries' and as would-be 'aristocrats.' 'Their (the rebels') creed,' wrote Henry Knox to George Washington, 'is that the property of the United States has been protected from the confiscation of Britain by the joint exertions of all, and therefore ought to be the common property of all.' However far this notion of 'common property' may have spread, the fact remained that the people daily saw their individual

properties confiscated through court action and the liberty of their persons threatened through the same agencies.

Direct action or open rebellion broke out in central and western Massachusetts in 1786, under the ostensible though little-coordinated leadership of Daniel Shays, a former captain in the Revolutionary army—'of doubtful reputation,' certain historians add, without further specification. Anyone who remembers what happened to the reputation of Thomas Paine at the hands of the prejudiced religious zealots, will be suspicious of this disqualification regarding Daniel Shays by equally prejudiced descendants of the would-be 'aristocrats' of 1786. Whatever 'doubt' may be cast upon his reputation as an officer in the Revolutionary army, Shays in the rebellion conducted himself as a true captain; he was the 'last to leave the ship.'

The strategy of the rebels was direct and clean-cut, consisting in the main of armed and mostly successful attempts to prevent the courts from sitting pending legislative redress. In addition, jails were broken into and debtors released. Villages and towns were occupied by armed rebels, and 'leading citizens' deposed from power or held as hostages. Boston was never penetrated by the rebels, nor were threats against the nearby courts at Cambridge and Concord carried out.

By certain historians much has been made of the alleged clemency of the 'constituted authorities' toward the 'misguided rebels'; that is, of the reluctance of the former to employ drastic methods against the 'mob.' The movement was not officially declared a 'rebellion' until the moment of its collapse a year from its inception, while the leaders, some of whom were court-martialed and sentenced to the

gallows, were subsequently pardoned, including Shays himself.

The facts, however, do not sustain this legend of clemency due to the 'humane' characteristics of the 'aristocrats.' Their 'clemency,' on the contrary, was quite obviously based upon fear, both for the time being and for the future. The rebellion unquestionably had the backing of the overwhelming body of the people, including most of the troops sent by Governor Bowdoin into the back counties to put it down. It also had the sympathy and support of large numbers of people in the surrounding territories of New Hampshire, Vermont, Connecticut and New York. It was in no sense a revolution, but simply a revolt against a temporary 'bottleneck' of social conditions requiring speedy readjustment and, as such, more than accomplished its avowed purpose. The aftermath of Shays' Rebellion is thus summarized by Thomas Egelston, great-grandson of Major General John Paterson, one of the military leaders in opposition to the rebels:

'After the rebellion was over, the legislature, by carefully prepared enactments, and the courts, by very wise decisions ameliorated the evils as far as it was possible, and the people themselves, by mutual forbearance, diminished the troubles which previous harsh measures had made so grievous. Imprisonment for debt ceased little by little to be the fashion, while laws ameliorating the too harsh relations between debtor and creditor were passed. The farmer saw that whatever else was true, his land could not produce everything that he required to work his farm, or even for his convenience and comfort; that he must purchase certain articles, and that, although these things might be imported, they were not of necessity

articles of luxury and therefore a cause of demoralization. Grievances were adjusted by proper course of law, and the State settled down quietly into a prosperity that it had never known, even in pre-Revolutionary times. Village life became a routine of everyday duties. The town meeting, which had been the safety-valve up to the time of the Revolution, resumed its functions, and peace and quiet reigned throughout the State.'

The Rebellion and the U. S. Constitution

The foregoing by no means tells the whole story. Behind the backs of the bewigged and powdered gentlemen engaged at that very moment in secretly framing a new Constitution for the States, stood the nemesis of Shays' rebel hordes tramping over the fields and through the towns of Massachusetts. These gentlemen of the Constitutional Convention, whom Charles Beard classifies as 'practical men of affairs—holders of state and continental bonds, money lenders, merchants, lawyers, and speculators in the public land'—were unquestionably influenced by events in Massachusetts to compromises and concessions that otherwise would have seemed to them unnecessary. For, in secret (the debates in the Constitutional Convention were not published until 50 years later), they expressed their fear of 'democracy.' Quoting from Beard:

'Almost unanimous was the opinion that democracy was a dangerous thing, to be restrained, not encouraged, by the Constitution, to be given as little voice as possible in the new system, to be hampered by checks and balances. Gerry declared that the evils the country had experienced flowed from "the excess of democracy." Randolph traced the trouble of the past few years to "the turbulence and fol-

lies of democracy.'" Arguing in favor of a life term for Senators, Hamilton exclaimed that "all communities divide themselves into the few and the many. The first are rich and well-born and the other the mass of people who seldom judge or determine right." Morris wanted a Senate composed of an aristocracy of wealth to "keep down the turbulence of democracy." Madison, discoursing on the perils of majority rule, stated that their object was "to secure the public good and private rights against the danger of such a faction, and at the same time preserve the spirit and form of popular government."'

In their terror of 'democracy,' the Fathers of the Constitution sought long and earnestly a way out of their difficulties. Among others they considered a 'property qualification' for the suffrage, but decided that the handful of bond-holders and money-lenders would not be sufficient to put the instrument across, since two-thirds of the voters necessary for ratification were farmers. So they dropped that proposal and substituted a three-part system of government: legislative, executive, and judicial, with many checks and balances, but with hazily-defined interrelations, which, Beard declares, has caused the whole world 'to marvel at their dexterity' ever since.

Still, the ghost of Shays' Rebellion would not down. A few years later, the first ten amendments were added to the Constitution—the so-called 'Bill of Rights'—and the United States was then fairly launched on its independent political career. In this manner, political 'wisdom,' as usual, waited upon the reaction to economic development and, then, in its practical applications to the situation, again, as usual, lagged far behind that development.

Shays' Rebellion was the first of

a series of agrarian reactions against the 'vested interests,' social movements leaving a broad trail across the pages of American history.

Meanwhile, at this point, another factor, of deterministic character, enters the picture. It will be considered in its beginnings and some of its subsequent social implications in our next installment under the title 'Whitney's Cotton Gin and Slavery.'

References on 'Shays' Rebellion':

Charles Martyn: 'Life of Artemas Ward.'

Thomas Eggleston: 'Life of John Paterson.'

Edward Bellamy: 'The Duke of Stockbridge.'

Charles and Mary Beard: 'Rise of American Civilization.'

From Here on Out

Keep Your Eye On The Trends

by R. F. Novalis

Increasing Trends..

	All-Time LOW	Latest HIGH Figures*
1. DEBT (U. S. Govt.) per person.....	January 1, 1840 0.21	\$1,870.00
2. ENFORCED LEISURE (unemployment).....	October 1944—630,000	1,575,000
3. MACHINE TOOLS in use** (cumulative total).....	1925.....	1,789,500
4. BANK LIQUIDITY (percent deposits to reserves, Federal Reserve Banks).....	1921.....	60.0%
5. GOVT. (U. S.) BONDS to total bank invest- ments (Federal Reserve Banks).....	1929.....	39.0%
6. GOVT. (U. S.) BONDS to total life insurance investments	1915.....	0.005%
		98.00%
		93.2 %
		60.03%

Decreasing Trends

	All-Time HIGH	Latest LOW Figures*
1. PRODUCTION (combined factory-mine-railroad freight) Index basis 1919-20 monthly aver- ages equal 100	Oct.-Nov. 1943—250	199.
2. MAN-HOURS WORKED (total of man-hours in factory-mine-railroad) (Note: 1919-20 month- ly average was 2.54 billion) Actual number	Oct.-Nov. 1943 3.14 billion	2.42 billion
3. MAN-HOURS PER UNIT in above industries, combined average	1919-20 = 100	39%
4. ENFORCED SCARCITY (load factor on installed capacity of above industries)	No Figures	22%
5. INTEREST RATES (combined average yield on Govt.-municipal-corporate bonds)	1919-20 6.12%	1.81%
6. OSCILLATION DOWNWARD of factory output since all-time peak (Oct.-Nov. 1943).....		35%

* September-October, 1945

** No figures available on number of machine tools scrapped

Ed. Note: See January-February "Great Lakes Technocrat" for detailed explanation of this table

* Note: Figure on Item 6 of Decreasing Trends in January-February issue Volume 3, No. 8, page 24 should have read 22½ drop instead of 40.

'One can live forty days without food, four days without water, but only four minutes without air. Which is the more valuable commodity? But air is so abundant it cannot be capitalized and sold. Every commodity made by modern mass production is headed toward the status of air. Sooner or later it will reach a

point where it will not function in a profit economy founded on scarcity, Overproduction, unmanageable surpluses, show that many commodities have already reached that point. It is, then, either a new system consistent with the age of power, or back a hundred terrible years to genuine scarcity. My money is on the new system.'—Stuart Chase.

Inventions + Technology = Less Jobs

By R. A. Seelig

(Condensed from the *Machinists Monthly Journal*, November, 1945)

In the Graphic Arts Building of the Smithsonian Institution is a display of models of inventions which have changed world history, such as the metal plow, the automobile, the reaper and the airplane. A sign reads: 'Creative inventions make new products and new industries create employment.'

The writer of the sign expressed a common belief which has been fostered by much industrial advertising. Opposing such a theory as that embodied in the sign, however, is the fact that an employment breakdown and something approaching national economic collapse came in 1931-32, in an era when scientific progress had reached a new high in world history.

Among inventions that had produced new industries during the preceding 50 years were the automobile, airplane, disk plow, steam turbine, sensitized photographic paper, wireless telegraph and telephone, ductile tungsten for electric filament lamps, high octane gasoline, pneumatic tire, X-ray, internal combustion engine, nitro-cellulose lacquers, high pressure lubricants, television, rayon, nylon, wood pulp paper and scores of others.

Inventions Reduce Jobs

The relationship of inventions to unemployment is not fully determined. However, it is clear that inventions and development of new industries do not automatically increase the net amount of employment; otherwise jobs would have been begging for men in 1932-33. There is strong evidence that advancing technology tends to cause a net decrease in employment

because of ability of machines to produce more goods with fewer workers.

'In 1933,' says the National Industrial Conference Board, industry's own spokesman, 'we used fewer man-hours of labor in manufacturing industries than we did in 1899, and in 1938 we fell once more below the 1899 level.' Meanwhile, our population of working age had been increasing more than a half million a year.

Examples of Job Losses

A coal mine employing 800 men installed a loading machine and displaced 500 of them.

In cigar making, four operators with machines produce the equivalent of 15 by hand.

One wrapping machine with one operator replaces as many as 40 hand wrappers.

The steel mills have introduced machinery that permits 1,600 men to do the work formerly done by 32,000.

In railroading, ton-miles have gone up but employment has gone down.

The phenomenal expansion of the aircraft industry after Pearl Harbor was accompanied by a 200 per cent increase in output per man hour.

In 1830 it took 268 man-hours to produce 100 bushels of wheat on five acres; and by 1930 40 man-hours were sufficient to accomplish the same result.

Typical of what is happening on farms, a planter in the Mississippi delta bought 22 tractors and 13 four-row cultivators and dismissed 130 of his 160 share-cropper families.

A Western Union device known as a 'floating switchboard' operated by

six persons, automatically routes telegrams anywhere in a large district, doing the work of 49 persons.

An advertisement of a business machine company states: 'Wrigley cuts force from 100 to 8 girls. Will save for you proportionately.'

An electric eye device inspects automobile engine wrist pins, doing the work formerly done by 10 to 20 persons.

In 59 manufacturing industries, the output per man-hour increased 91 per cent between 1919 and 1938, according to figures taken from a Department of Labor report.

No Limit to Automatic Machinery

The National Resources Committee reported that 'manufacturing, aided by these registering and controlling devices, will develop further toward the straight line process and full automatic operation.'

There is no limit to the possibilities of automatic devices and there is every indication that no matter how much production is increased, employment will tend downward, unless government takes appropriate action. Chief among the actions required is reduction of hours of labor and increase in the hourly wage in order to spread work and maintain purchasing power. Shorter hours and higher wages are not the sole preventive of another depression, but they are basic.

Need to Face Facts

The war provided full employment—temporarily. Current large purchasing power and pent-up demand for goods and services may temporarily provide something near full employment in the immediate postwar period. A permanent solution depends to a large extent upon recognizing the economics of a machine age and distributing work and wages to fit facts.

Machinery manufacturers express fears of attempts to repress new labor-saving devices by tax or other methods. In their literature they picture machine-smashing orgies by excited mobs of displaced workmen in England during the Industrial Revolution.

Machinery Is Beneficial

Inventions are the source of comforts for the common man such as kings of old could not enjoy. Scientific progress and machinery were a prime factor in winning the war. Invention should be stimulated, not curbed.

But the replacement of labor by machinery has accelerated as compared with 50 years ago. The use of machines for producing power in great quantities at low cost is relatively new. More progress has been made in generation of electricity in the past 20 years than in the preceding 2,000, according to General Electric Company. The steam turbine has been developed to a point where it produces a kilowatt-hour of electricity for the burning of less than a pound of coal; and there are engines that develop more than a horsepower per pound of their own weight.

In 1837 only 436 patents were issued. Now 40,000 to 50,000 are issued yearly. The increasing rate of invention goes hand in hand with increase in production per man-hour in agriculture, manufacturing, mining and related industries.

This means that government action to distribute work and income must also be accelerated and become more positive and widespread.

'Knowledge is power,' says an old proverb. Unemployment won't be eliminated unless our people become aware of its basic cause, advancing technology.

My Bonnie Lies Over the Ocean

Foreign Trade—Fact or Fiction

By Sgt. Scoop

If You Sell, You Must Buy

Vice Admiral Emory S. Land, U.S.N. (Retired), Chairman of the United States Maritime Commission, in an article printed in the June 1945 *The Kiwanis Magazine*, stated that: 'Maintenance of full employment is becoming accepted as the primary consideration of national economic policy.'

He writes on the theme that foreign trade carried on by our own merchant marine will contribute largely to this full employment:

Such an increase in foreign trade as the Commission envisages would result in considerably more than the five to six million jobs that directly or indirectly had root in foreign trade and the shipping industry in pre-war years, for shipping requires more men on shore than at sea.

Additional benefit is credited to foreign trade by the Admiral as follows:

In almost every discussion of the post-war period there arises the question of foreign trade. There is unlimited justification for international commerce becoming an important topic, for the flow of commerce between nations is the lifeblood of world amity.

'The lifeblood of world amity'?

One may well wonder at this statement, for history records conquest, plundering exploitation, and international wars because of trade, this so-called 'lifeblood of world amity.' If one studies the course of world trade, one studies at the same time, unavoidably, the course of the modern empires, the course of exploitation of

colonial and other subservient peoples, and the course of modern war.

In his article 'A Merchant Marine—As Peace Insurance,' Admiral Land indicates his knowledge of the declining volume of foreign trade, although he reiterates hopes that it would increase greatly after the war. Only as he approaches the end of the article does he make a statement of prime importance, a statement so out of step with the theme of the article as a whole that it glares forth like an accident. This statement is:

The extent to which producers throughout the world find it advantageous to exchange goods is the prime factor that determines the volume of international trade.

This is basic. All the words put forth orally or in writing are but hogwash if they do not conform to the basic question of advantage. Possibly the most straight-to-the-bullseye exposition of the actual situation yet printed is 'The Age of Alchemy,' by Garett Garrett, printed in the *Atlantic Monthly*.

The opening paragraph should send a tremor of death from bow to stern of every one of Admiral Land's postwar ships. It is:

Stated simply, the one most important institution in our complex scheme of material civilization—universal in it—is breaking up before our eyes. World War I rocked it to its foundations; World War II may well finish it. The name of that institution is international trade.

In contrast, Admiral Land states: 'The Commission believes that it

(foreign trade) can be doubled, or even trebled.'

The White Man's Burden

Admiral Land will be sadly disappointed. His anticipated increase in foreign trade will not materialize, and the reason is chemistry. Let us take a few 'for instances' to illustrate the fact that the chemist is figuratively dissolving the postwar merchant marine.

Prior to World War I, ships were busily engaged in transporting nitrates from a Chilean desert to the industrial countries. Germany accumulated huge stockpiles for use as a nitrogen source for explosives. During the first World War, the supply fell far short of needs and the German chemists perfected their methods of getting nitrogen from the air on a large scale. Other nations followed suit; Chilean nitrate shipping was thereby reduced.

Prior to World War II the importation of silk, rubber and quinine from the Orient occupied a portion of the world's merchant marine (foreign ships carried up to 70 percent of our foreign trade). Now our synthetic plants can and do produce as much or more of these products or their substitutes as were formerly imported. Will we abandon our new industries after Peace is declared? These industries are an integral part of the vast developments of science. Our way of life demands that we go forward, not backward.

Much of England's early ascendancy in the field of world trade was due to its textile industries. The raw materials were shipped from such producing areas as India, Egypt, Australia, Canada, Argentina and our own southern States to be processed in English mills. The inexpensive textiles were then marketed throughout the world. This arrangement seemed a

'natural.' It conformed to the theory that certain areas were destined to be producers of raw materials, while other areas were to process the materials with their machines powered by energy from deposits of coal or oil with which the manufacturing areas were fortunately endowed.

This 'natural' is now fighting for survival. Two things happened which upset the arrangement. First, the raw material countries found energy sources and developed the know-how to process their own materials for themselves; second, the chemist produced substitutes that compete on even or advantageous terms with the available products of nature. Witness the growing industrialization and self-sufficiency of Canada, Australia, India, Brazil, South Africa. Witness the development of the synthetic fibers, nylon and rayon, to compete with cotton and silk on such advantageous terms that our national government has chosen to subsidize the growing of cotton.

The Man Who Came To Dinner

The power that lies in the hands of the chemist has been terribly demonstrated by the war making powers of the so-called have-not nations. This power of chemistry is rising throughout the world, transforming an international trade economy into an economy of self-sufficient areas. Garet Garrett refers to this age of wonders as the 'Age of Alchemy.' The chemists, the technologists, the engineers have but begun to transform the economy of the world, and without themselves being economists, politicians, or financiers. The present and impending changes doom world trade as a source of either great profit or appreciable employment.

Before we indulge in attempts to stimulate world trade beyond its natural life, let us note the fateful ex-

ample of Great Britain's position. The expansion of British mercantilism was based on availability of mineral and energy resources for use in industry, the products of which would be sold profitably in world trade. Furthermore, Britain became the world's financial center and a creditor nation.

The war has reversed Britain's financial position. In order to meet war purchases and to keep exchange balances, Great Britain has been compelled to sacrifice practically all of its investments abroad. It has also gone into debt on a huge scale, especially to the Dominions. Exclusive of lend-lease with the U. S. and mutual aid with Canada, Great Britain is already in hock for her total exports, at the prewar rate, for 10 years. If Great Britain is to maintain its prewar export status and pay off its obligations to the bloc currency group alone (dominions exclusive of Canada), her postwar exports of net physical goods must be increased to over 800 million pounds. It is highly improbable that this can be done.

Britain's tin is gone; its copper is gone; the coal mines are going deeper and farther out to sea; the iron mines are going deeper and the ore is becoming poorer. Canada, Australia, South Africa and India are no longer export agrarian economies, but competing export manufacturing economies. The period that made Britain great is gone. Britain grew with the period of world trade and world exploitation. That period is gone, vanquished by the universality of science.

The dependency upon material found in natural existence was a normal step to man's conquest of materials. World trade was part of the mechanics necessary to make materials available for processing and redistribution. Scientists have changed that reliance on naturally existing forms of

matter, and with the change have altered the entire picture of world trade, making Admiral Land's predictions of increased use of the merchant marine for international trade but futile hopes.

Heretofore man has worked with the forms of matter as he has found them, adapting his ends to the limitations of the materials. Now the chemist works on the composition of the matter itself, not just its form, and by changing the nature of the molecule creates forms never found in nature. The many plastics are examples of this progress in science. No longer must ships plow the seven seas for fibers, for instance, when synthetics can be made from sand, coal and air, or many types of vegetable matter.

Science, not world trade, must provide the answer to the problem of full employment after the war. An area economy with scientific utilization of the resources will replace world trade. The way must be pointed out by the men of science, for only they can make a fully employed and prosperous nation after this war.

Instead of chasing after dead ducks like foreign trade, America needs to face its modern social problem in the light of the social aspect of Science. The facts of our problem are at hand. The solution is here. Even the blueprint of social operations is all set to go. In the social mechanics of operating a Continental Area for the benefit of the human components involved lies the answer. Geopolitics is dead. Long live Geotechnics!

Investigate Technocracy

'At every particular moment it is the dead rather than the living who are making history; for politically individuals think dead men's thoughts and pursue dead men's aims.'—Leonard Woolf in *Western Producer*, December 1945. (From Prince Albert, *Saskatchewan Co-Ordinator*, issue No. 29.)

The Answer Is You

A Challenge to All Americans

By Louis Verhovic, 8141-15

How Long Is A Rubber Band?

In the early depression years it was claimed that a federal appropriation of five billion dollars would wreck our economy, yet during the past ten years or so our government has spent money at a rate never before even dreamed possible. In the more recent years, our economists and politicians have assured us that there is nothing to be concerned about with regard to our national debt, that we owe the money to ourselves. This is an asinine misstatement. If we owe the money to ourselves, there is no reason even to keep track of the sums involved. We could merely cancel the whole thing, forget about it, and start all over.

The fact of the situation is that the people who have to pay are not the same as those who receive. In other words, the vast majority of the people owe to the very few. The total amount owed in the Federal debt structure of these United States comes out at about \$1,800 per capita. Very few of us personally know five people who own \$1,800 worth of government bonds. The obvious conclusion is that we do *not* owe the money to ourselves, but we *do* owe the money to the speculators, financiers and investment houses.

In the hopes and plans of the present-day economic and political leaders of America rests the fond dream that the future taxpayers of the country will be the ones to be stuck with the bills. The situation might be ideal except for several factors. Up until Pearl Harbor, American business and politics had but one ideology, God

save business! Then came the war and business and politics repledged and reiterated their loyalty to America. The long-drawn internal feud for profitable markets gave way to a co-operative exploitation of government funds for war production in the guise of patriotism. Factories were built, equipment manufactured, manpower requisitioned to produce the sinews of war, while wages were frozen.

Business complied handsomely (at cost plus), although not too willingly at first. Government assurance of investment safety aided the disciples of the dollar to convert to war production. The pleasant prospect of government subsidy convinced the master minds of industry that they had to produce goods if they were to make money while we were waging a war. Our nation at war conscripted some 12,000,000 men into its Armed Forces. The huge demands of a technological war compelled the producers of war goods to initiate better methods of production. Bonuses were paid for time-saving ideas. Minor adjustments on the machinery made its productivity increase by leaps and bounds.

Technology was installed, modern, automatic equipment which knows only how to produce. Machines in an America at war roared on, with the frozen wages of production workers on the one hand and business patriotism on the other. Thousands of new millionaires were created, while Americans died in the mud of Europe, Asia and the Southwest Pacific. War workers stayed on their frozen jobs with their frozen wages, hoping for an early victory, while business rolled in the luxury of a seller's market.

Rationing came to the people while the newly-made rich wine and dined in the hostleries and exclusive clubs. The curtain isn't drawn yet, the last act is yet to be played. Technology and energy have yet to play their final role in the national scene.

Picayunish Means Small Scale

The economics involved in producing the materiel of war is of a different nature than that involved in the production of civilian goods. War goods may be destroyed or otherwise rendered useless. They are not consumer goods, and as such are of little or no threat to the economic system, no matter how abundant they become. The only juggling required is that when the warehouses become glutted with the products of America's technology, we must proceed to destroy them (the goods) more rapidly than they are produced, or else put a curb on the production. Numerous plants were shut down while the war was on due to the overproduction of their particular commodities. They simply mass-produced themselves out of existence. A Price System cannot distribute abundance, but knows very well how to restrict it in peace, and destroy it in war!

Theodore Schultz, University of Chicago agricultural economist, asserts that four million farms will produce a third more food in 1950 than did the six million farms prior to the present war. The year 1950 is not so far off. What about the proposals that the veterans of the Second World War rehabilitate themselves on the farms? Political aspirants claim it to be within their power to adjust the social and productive mechanism. Both political parties have assured us that they had the problem in hand.

Are we mad? Don't we recognize that since the turn of the century the proportion of the population engaged in agriculture in the United States has

dropped from about 37 per cent to 20 per cent, in Canada from 40 per cent to 22 per cent? Are we completely bereft of our senses? Aren't the same people who promised us the chicken in every pot and the return to prosperity the very ones who now promise us the glorious postwar America? Are we too stupid to realize that the technological advances which have occurred in industry have also occurred on the farms? Can't we recognize that the layout, operation, production, distribution and processing of farm goods requires a tremendous job of engineering?

It must be pointed out that the discovery of coal had more impact upon civilization than all of the debating, blundering, poor leadership, party favoritism, jingoistic patriotism and congressional spitball throwing by all of our politicians. We must point out that never in America's history have politicians attempted to apply scientific methods of procedure to the solution of America's problems. Politics, as an institution, has no further interest than the maintenance of its own status in our stupid society. As such it never has, does not now and never can provide Americans with anything but the continuance of a social and economic system, which in its very nature is incompetent to deal with the social, economic, philosophical, religious, moral, physical or psychological problems that today confronts the leadership of our Continent.

Make no mistake about it; the answer was *not* given at the polls on the second Tuesday of November, 1944, or on any other election day. The answer lies in America's technology, in America's horsepower. It also lies in America's people, who understand the social mechanism that is required to produce and distribute to all the abundance that America can provide.

From the Camera's Eyevew

Conceived in Energy

We Hold This Truth

The rise of America has been told and retold in song and story. The axe and cherry tree school of chroniclers has labored voluminously, weaving romantic tales. These stories lack conviction because Exhibit A is missing. Behind our traditional facade of individual and minority group struggles for self-advantages an omnipotent physical force has always operated, determining events and motivating men. That force was the impact of the industrial revolution upon this Continent. Its power continues to this day.

America began its career shortly after the first practical energy converting mechanism was put to work in England. With this conquest of extraneous energy human history underwent a major change. The ancient Price System expanded. Discovery and invention flourished. Hand tools and toil gave way to machine manufacture. America, rich in natural resources, forged ahead of the world. By the opening of the 20th Century progress in the industrial arts had developed into Technology. Process technofacturing now replaces machine fabrication. The flow line is coming into its own. America was conceived in energy and grew into Technology.

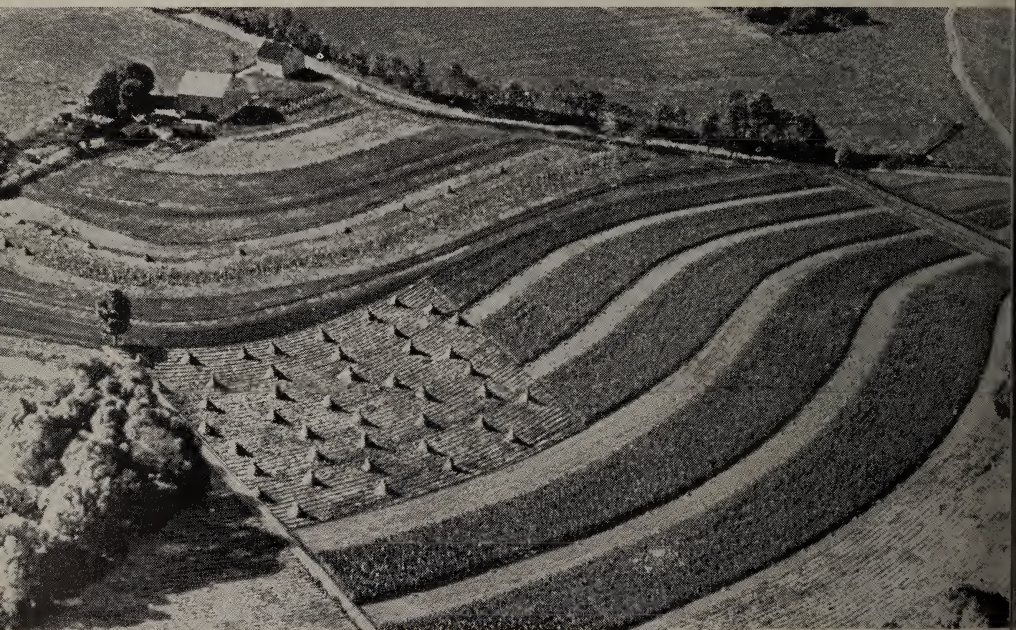
The lump of coal shown below is a worthy symbol of our technological culture today. It is our major source of extraneous energy in America. Over 200,000 useful products besides those shown are derived from coal. The continuing impact of the industrial revolution is creating a functional social organism within the anarchistic framework of the ancient Price System. Extraneous energy is the omnipotent physical force determining events and motivating men on this Continent. That is Exhibit A. Professors take notice! (Continued on page 32).





Photo: Courtesy Bristol Brass Corp

A colonial surveyor with his brass transit. The rectangular system of subdividing land was adopted in 1785. Before that most of the eastern U. S. was surveyed by the old metes and bounds system. This was a word picture of landmarks composing the boundaries of a property. It was workable to a degree but crude. Topographic geological surveying and civil engineering require exact measurement. Log cabin and Indian fort were on the frontier yesterday. Technology is on the frontier today.



Soil Conservation Photo

A composite view of two farms. One is in Pennsylvania and the other in Texas. Contour farming conserves soil. We have mined our soil the same as our forests and minerals for the 'take' that was in it. One-third of our top soil is gone. That's the price paid for 'free enterprise' in farming. 'All men are born free and equal' translated into the Operating Rules of the Price System means 'All men have an equal right to chisel.' America, under the Price System, is dedicated to chiseling.



Photo: Courtesy Morrisdale Coal Mining Co.

Here is energy and technology in one picture, a continuous flow process. The company's Maxon Slope Mine is mechanized from the working face to the railroad cars. The slope conveyor shown is 36' wide, 750' long and handles over 4 tons per minute. Results of mechanization have been to greatly increase output per man-hour and produce a better grade of coal. More production but less jobs. This in itself is a technological process affecting our whole social economy. It is a one-way process.



Bonneville Power Administration Photo

Bonneville Dam on the Columbia River. Dr. Paul J. Raver, Bonneville Power Administrator says the Columbia and tributaries have a potential power capacity of 300,000,000,000 kilowatt-hours of energy a year. This is more than total U. S. production today and is equal to nearly 4 trillion man-hours of labor. Says Dr. Raver: 'What you would be harnessing is an inexhaustible energy cycle of the sun and putting it to work.' America does not need atomic energy. It needs technological controls.



Campbell, Wyant and Cannon Foundry

During the war the American Price System foreswore its sacred scarcity principles. Of course, it had to be bought off at a high price. But energy and technology were turned loose to a certain limited extent. It was enough, for they swamped the world with mechanisms. America's Men, Machines and Materiel won the war. Corporate enterprise got the gravy. That's the Price System for you. Now comes the Peace. It too must be won with energy and technology.



Bureau of Reclamation Photo

A transmission circuit, another symbol of America's technological culture. Its wires sing of power. Power for factory, mine, mill, railroad, farm, power for housewife, chorus girl, old folks' home, the man on the street and the man in the electric chair, power for the debt merchant, sky pilot, coupon clipper, procurer and prostitute, power for all, but all must pay. Price first, then power. That's the Rule. Conceived in energy America is still dedicated to the ideology of chiseling.



Press Association Inc.

Here's the way you do it when you don't have POWER. There are 40 or more coolies pulling a heavy stone roller to smooth off an airplane runway. Total energy about 5 hp. Above roars an American Liberator with thousands of horsepower. China is a great nation for philosophy but it takes POWER to produce goods. America is a great Continent for Power but it takes technological controls to utilize it fully. As a people we're as far off the beam on our problem as the Chinese.



Photo: Courtesy Page Engineering Co.

A strip mine in Illinois. It operates two walking draglines with 25 yard automatic buckets in stripping off overburden as deep as 80 feet. One unit digs about 25,000 yards a day. In 1944 Illinois strip mines produced 17,000,000 tons of coal. Prior to 1920 strip mines hardly existed. The average output in strip mines is about 25 tons a man per eight-hour day. In 1840 it took 1 man 12 hours to dig 1 ton of coal. The difference is extraneous energy. The difference gets rapidly greater.



Photo: Courtesy Firestone Tire and Rubber Co.

High frequency energy curing of rubber mattresses is 10 times faster than steam. A 125,000 watt generator operating on 13.66 mc. vulcanizes by heat of molecular agitation. Says Chairman John W. Thomas of Firestone: 'The use of electronics in industry—gives great promise of revolutionizing manufacturing methods.' The Firestone Research Manager says electronics will be in common use for curing tires in two years. Down go unit costs and jobs, up goes production. Who will they sell to?



Photo: Courtesy Ford Motor Company

Yes! The accent is on science and its offspring Energy and Technology. That's how modern industry produces. Here is the nucleus of our American problem. We must put the same accent on the solution of all problems of society. The Price System cannot do it. Reason? It employs political, moral and financial methods, where technological controls are needed. Our entire social structure must be redesigned. This scene is along the Columbia Icefields Highway in Alberta, Canada.

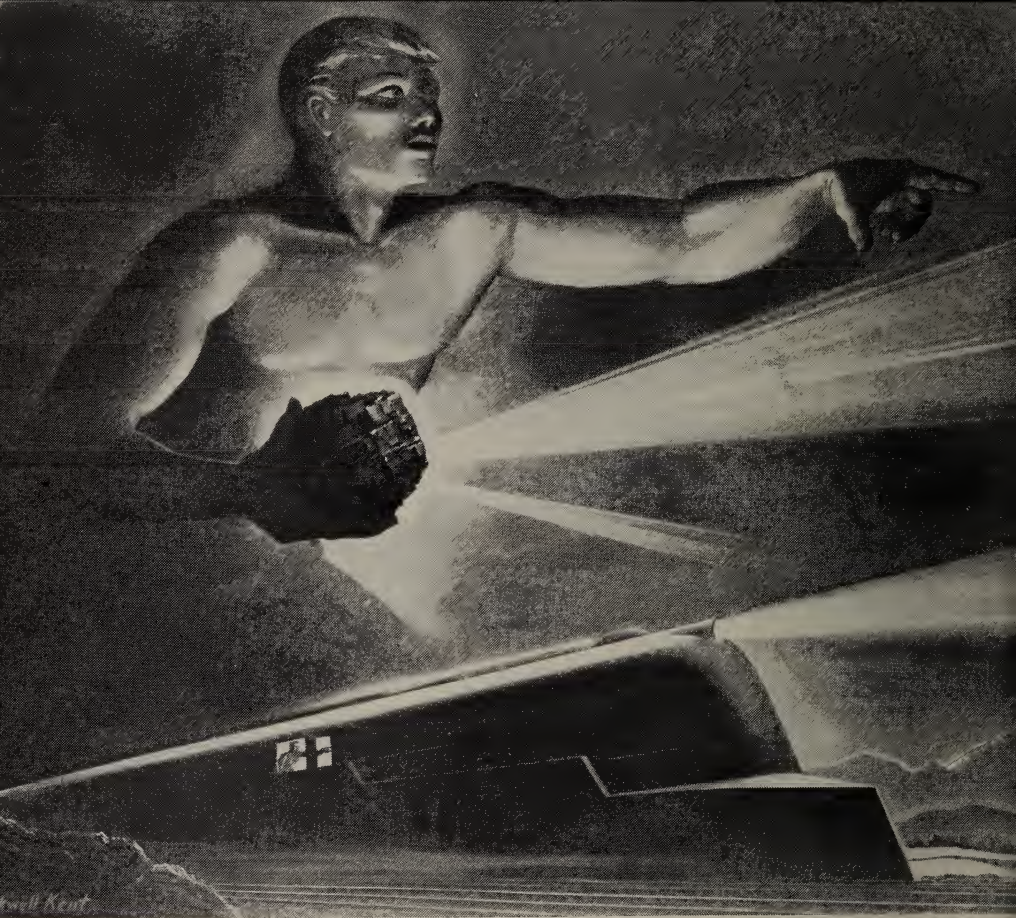


Photo: Courtesy Bituminous Coal Institute

'Power for the Wheels of Progress'

However you define progress, every advance in the General Welfare can be measured in units of power. Technocrats have been called 'Knights, not of the sword but of Energy.' For over 12 years Technocracy has been teaching the paramount importance of energy and technology in relation to America's social problem. It has put the accent on Exhibit A.

All the do-gooders are now thumping it up to save the world from possible atomic destruction. They see the problem out of focus with its factors. The world cannot be saved at all, unless America is saved first. Saved from what? Why, the Price System, of course! 'Oh, horrors, you can't do that. It wouldn't be democratic,' say the do-gooders.

Saving the world from atomic destruction is a problem in energy control. It is a scientific, not a political, problem. America has the most highly developed technology. Free that and you save America, and then the world. After the Price System is abandoned here, the entire world will be safe to develop in peace. It is the Price System which has gotten America into the mess it is now in and it is the Price System that is now playing around with the loaded gun of atomic energy. Put that on your slide rule, professor! The answer you will get is that you can't dodge Exhibit A much longer.

Like the streamlined train in this picture, America's magnificent technology plows along through the night of the Price System. Dawn is just over the horizon. It always comes. It came at Hiroshima. It will come here. What will it be like? The Genie points out the way. He seems to say: 'Forward, it isn't far; now! Energy lights the way. Technology turns the wheels. Eyes ahead! Chin up! It's there! I can see it! FORWARD TO THE NEW AMERICA!'

Primer of Technocracy

The Answer Is Energy

By Wiley Holcomb, 8342-1

Energy Is Basic

Man has existed on this earth for hundreds of thousands of years. Archeological data and six thousand years of recorded history have given us some idea of how he existed. The most interesting chapter is the story of his struggle for the control and development of the flow of energy. This has been not only the least understood chapter of man's history but also the most misunderstood. Historical research has done an excellent job of piecing together the story of the human race as a whole. Had it confined its written results to a simple recording of the facts, the way of the history student would be less confusing. A great deal of attention, however, is given to acts of political intrigue, military exploits and business acumen, as though by these man had been enabled to progress from a primitive state to what we are pleased to call modern civilization. A more critical examination will disclose that these episodes are only some of the more colorful escapades of our predatory ancestors and had nothing to do with social change.

Social change occurs only when man makes a new application of his accumulated knowledge to the means whereby he lives. In any social system where man is the sole means of doing work, very little social change is possible. Even today, without the use of technology, man cannot spade an acre of ground any quicker than the Egyptian Slave.

The Industrial System and standard of living of today are the result of 150

years of scientific development. It should be noted that the human race made no real progress until it was discovered how to convert energy by mechanical means. It is interesting to note that the first practical steam engine was built in 1776, the year of the signing of the *Declaration of Independence*. Adam Smith's *Wealth of Nations* also was published in that same year.

Every school boy has studied the history of the *Declaration of Independence*. Every economist is familiar with Adam Smith's *Wealth of Nations*, but the significance of James Watt's steam engine is overlooked. The *Declaration of Independence* is an historical document declaring the political independence of the American colonies from England. James Watt's steam engine was the first practical step in the harnessing of the Sun's energy by mechanical means. This effected a profound change in the method of getting work done, and consequently brought social change to the whole social structure. Adam Smith's *Wealth of Nations* was invalidated in the year of its publication by Watt's steam engine and has served but to confuse and confound students even to this day.

Life Is Energy

All living organisms exist only as a result of the flow of energy from the Sun. Plant life is the only living organism which can utilize the sun's energy directly. All other forms of life are one or more steps removed. Hence plant life is the doorway through which the flow of energy

from the sun becomes available to other forms of life. Chlorophyl, the green coloring matter of the plant, can be called the key to life. It is this substance, acting as a catalyst, which effects the wedding of matter and energy. Some plants can be used by man in their natural state, but for the most part they must be processed. Coal and oil, both highly concentrated stores of energy are traceable to the sun. Both are the remains of plants and animals preserved from decay by burial under great thicknesses of rocks. Coal and oil in their present forms are the result of nature's slow process of alteration through geologic ages.

Our industrial system of today is only possible because of man's ability to concentrate and speed up, under more favorable conditions, some of nature's processes. To illustrate this we can use agriculture for an example. Through a process of selection, irrigation and fertilization plants grow and produce far in excess of what they do in their natural state. In the United States in recent years we have been in a position where edible crops could be diverted to industrial uses not related to the food supply. No parallel of this kind existed in previous history, or even for most of the world today.

We have stressed the part played by plants as a converter of the sun's energy for man's use. Here we wish to note an exception. That is the energy of the wind and falling water. Both derive from the sun but are not directly related to the biological processes of plant or animal life. The life of any area, plant, animal or human, is dependent on the continuous flow of energy from the sun. If that flow is interrupted for any appreciable time, life disappears.

Energy Can't Be Evaluated

Man in his primitive state was en-

tirely dependent upon nature for his food and shelter, in perilous competition with the animals. Through the possession of a higher order of intelligence, he was able to change his status from that of competition to that of mastery over the animals, and to varying degrees over nature. We do not know how long this took or the exact order of the steps in his progression but we do know of some of the more significant ones. First came the discovery of fire, then the domestication of certain plants and animals. The early discovery that man, by organizing with others and allotting certain tasks to each, not only increased the total production of the group but also provided more security for the individual was another step.

When man began living in communities, he developed the basic foundation of all Price System economies, i.e., exchange based on commodity evaluation. Any object derives its exchange value on the basis of its relative scarcity or abundance. When man places a value on the product of his labor and exchanges it for the product of someone else's labor, he is in effect attempting to evaluate the flow of energy. This can work only where man is the prime mover. Value depends upon scarcity and energy is plentiful in America.

In the early handicraft-agrarian civilizations man occupied a dual position. He was the prime mover of all work done and he also conducted social affairs among men. Throughout the thousands of years that the human race lived under the scarcity conditions of handicraft-agrarian civilization, he developed a type of social control and mode of behavior best suited to that kind of an environment. It conditioned him into being the most acquisitive of all species of life. It is only

natural, then, that the more astute and ruthless should seek control of the production of scarcity and thus gain a differential advantage over society in general.

This type of control constitutes an interference in the orderly working of any society. However, in a society where man is the prime mover, the opportunities to interfere with its orderly working are restricted to the same low scale at which he is able to produce. The degree of social interference from the top is not dangerous. When the rate at which man utilizes the flow of energy increases, then the opportunities to interfere also increase. Then, social interference from the top becomes a menace to the General Welfare.

In the United States today over 98 percent of all work done is done by energy other than human. Man no longer occupies the same dual role. Our social controls and mode of behavior, however, are still predicated on a theory of scarcity conditions. Today we tolerate a very dangerous degree of interference with the orderly operation of society.

The last 20 years presents an unparalleled example of man in conflict with his social inheritance. Witness our efforts for ever greater production, while at the same time we engage in wholesale destruction, in an effort to maintain our mythical social importance of occupying the dual role of prime mover of all work done and the director of affairs among men. What is the reason for this illogical behavior? It is simply that our Twentieth Century civilization has a background of seven thousand years of handicraft agrarian culture. It has found its modern expression only in the energy conversion and utilization in the era beginning with James Watt's steam engine. To put it another way, the

social hangover of the past dominates our industrial culture today.

Energy Must Be Measured

Energy conversion is the common denominator of man's activities. The control of society is and always has been derived from the energy converted in the process of living. The method of control must, of necessity, be based on the principal energy converter. Man has occupied this position for thousands of years. The domestication of animals, the development of windmills and crude water wheels had no appreciable effect on man's position as the principal energy converter. James Watt did more than build a steam engine. He was tugging at the foundation of man's superimposed social controls.

The mechanical conversion of energy accounts for nearly all work done in the United States today. The method of social control must of necessity be based on this fact. The atomic bomb is forcing a belated recognition of this. The only known way for controlling mechanical energy conversion is by the exact method of measurement. This method of measurement must be extended to the overall control of society.

The only method of social control which conforms to the physical problems posed by a social system which produces its goods and services by two billion installed horsepower of energy converters, is the Energy Certificate of Technocracy. We cannot emphasize too strongly that the Energy Certificate is a method of social control applicable to a high energy converting area ONLY. It is not to be confused with any perpetual motion theories of high finance, politics, economics or philosophy.

To properly understand the func-

tion of the Energy Certificate, we must know under what conditions it is to apply. There must be sufficient natural resources available for the production and distribution of an abundance for all. Such resources include energy, minerals, croplands, trained personnel, technology, equipment, etc. The Energy Certificate then becomes an integral part of the social mechanism in the production and distribution of an abundance. The purchasing power of the Energy Certificate is related quantitatively to the physical cost of production of goods and services, that is, the definitive unit on the Certificate is the equivalent of the energy used in production. The total Energy Certificates used in a 24-hour period are recorded and totaled, thus giving a continuous 24-hour inventory.

From this method of procedure, those responsible for the operation of the production and distribution sequences will be able to make decisions quantitatively. This may sound rather abstruse. If so, let us be reminded of some pertinent facts. The technique of measuring has been applied to 'product control' throughout nearly all modern industry. We are continually increasing our energy conversion capacity by new installations and increasing the efficiency of existing equipment. Atomic energy is no longer just a vague theory. We have set in motion a force of such magnitude that it can be controlled only by exact methods. It is both a challenge and an opportunity.

Conclusion

The essence of our social problem today, then, is the necessity to apply quantitative methods of measurement to its solution. The quantitative character of our present principal energy converters makes this possible, indeed

compulsory. The difference between our Power Age Culture and the handicraft-agrarian civilizations of the past is that we are now in the fortunate position of being able to MEASURE social problems. We can arrive at social decisions by metrical methods.

It is no longer necessary to use the control methods of the past wherein social decisions were effected by opinions and authoritarian dictums. The continued impact of science and technology upon society in the last 150 years has produced a quantitative change in social problems. These can, for the first time in man's history, now be measured. That is the only way to solve them. The Energy Certificate of Technocracy is one of the metrical instruments of social control that can be used in a technological society such as we now live in. There are others of importance also.

The entire social design of Technocracy is based upon technological principles derived from physical laws. The foundation is Energy. The methods of operation are metrical. The end results will be a tremendous advancement in the General Welfare.

If you are one of those Americans concerned about the future of your country; if you are concerned about your own future and that of your family, we urge you to investigate Technocracy. The answer to your problem is there.

Get Away Old Man

The average age of the scientists who worked on the atomic project at Los Alamos, New Mexico, was between 29 and 30. The average age of the special Senate Committee (politicians) on atomic energy is 57½ years. (*Chicago Sun*, November 23, 1945.)

Technocracy and Your Trade

The Rubber Worker

By Organization Division, 8741-1

Goodyear Started It

The rubber products industry comprises two groups, i. e., Rubber Tires and Inner Tubes and Other Rubber Goods. The latter group manufactures such items as boots, shoes, heels, soles, raincoats, sheeting, water bottles, gas-kets, washers, gloves, etc. In fact, there are over 30,000 industrial and consumer items that contain some form of rubber. These are manufactured principally in small establishments. In 1929 there were 434 such factories. By 1939 this number had increased to 552.

In contrast to this, the number of factories making motor vehicle tires and inner tubes was only 91 in 1929 and declined to 53 in 1939. However, even in the non-concentrated Other Rubber Goods Industry, technology has been at work. The peak of production and man-hours used, prior to the war, came together in 1928. Taking 1929 to equal 100, production of Other Rubber Goods stood at 103.8 percent and man-hours at 103.1 percent in 1928. Both declined steadily up to 1936, but man-hours declined more than production.

By 1936 production stood at about 80 percent of 1929 and man-hours at 72.8. In exact figures the total number of man-hours used in 1928 was 232,995,000. This declined to 164,569,000 in 1936. Total employment likewise declined from 84,200 in 1928 to 81,500 in 1936. Output per man-hour, however, went up. Again, taking 1929 to equal 100, the output per man-hour rose from 100.7 in 1928 to above 122 percent in 1936. This explains the lesser decrease in production over this period,

as compared to the greater decline in total man-hours used.

Due to the dispersed character of the Other Rubber Goods industry, it is difficult to get a good, clear picture of the impact of technology. Complete figures are not available for some years. There was a rise in production in the entire Rubber Products Industry beginning in 1936 and continuing up to the outbreak of war. This amounted to a 7 percent increase over 1929. Presumably the Other Rubber Goods group shared in this increase, but we could not find a breakdown of production figures into separate fields. The sources of the information used above were the W.P.A. National Research Project, the *Statistical Abstract* and the Bureau of Labor Statistics.

What sort of a picture does this data boil down to? First, we note a 24 percent increase in the number of small plants; second, about 3 percent decrease in employment; third, a 30.3 percent decrease in man-hours used; fourth, about a 20 percent decrease in production; and last, a 22.3 percent increase in output per man-hour. This picture is not typical of the impact of technology. There are modifying factors present. The figures on total employment are irrelevant to the underlying effect. Purchasing power is based upon the number of man-hours used. Here we have a 30 percent decrease in man-hours but only a 3 percent decrease in total employment. Obviously, the group of workers as a whole received 30 percent less purchasing power. So, there must have been a lot of sharing-the-work, to maintain total employment.

Divide and Lose Your Shirt

You can bet that the boss didn't do much of this dividing up. That Christian privilege is always reserved for the workers. Production fell about 20 percent but man-hours were cut 30 percent. The factor that made possible the big decrease in total man-hours used was the rise in output per man-hour. That is one of the major effects of the impact of energy and technology. If the Other Rubber Industry was not dispersed into a large number of small establishments, this effect would be greater. A small plant cannot install a maximum of technology. This can only reach a high degree of application where there is volume production and continuous flow processes.

There is another aspect to this picture deserving consideration. That is the increase in number of small establishments manufacturing rubber items. This trend is contrary to the typical progression of American industry. In that respect it is anti-American. Our present level of living standards and the possibility to move upward to much higher levels came about as a result of the state of development of technology and the degree of its application. This is possible to any appreciable extent only by integrated and concentrated industrial sequences of operation. In other words, units big enough to apply a maximum of technology.

The cockroach capitalist who operates a small plant is perforce required to apply cockroach methods of production. This leads to cockroach living standards. Small business may be 'sacred' to free enterprise but we have noticed that the small chiselers always jump at the chance to become big chiselers. Small operations, small thinking is characteristic of fascism.

If you carry it far enough, you get back to hand tools and human toil. That is not the destiny of America. So, let us leave the small operations of the Other Rubber Group and have a look at what's going on among the big chiselers in the tire industry. They've got what it takes to apply technology on a big scale.

Did Rubber Win the War?

In contrast to the dispersed character of the Other Rubber Goods group, the Tire and Inner Tube industry is a highly concentrated operation. As early as 1935 tire sales of the four largest companies 'constituted about 90 percent of the total by value.' The number of establishments has been constantly declining. 'Tire production is by far the largest end use of rubber now as it was before the war.' Then 'about 80 percent of the new rubber consumption and 45 percent of all reclaimed hubber went into tires.' During the war these amounts were reduced to 70 and 25 percent, respectively, due to diversion of rubber to other war uses.

Production of tires has gone sharply upward since 1939. In 1944 it was 'double the 1939 figure.' For the first three years of the war total output was 42 percent over the three years immediately preceding the war. However, due to the war, the nature of that production changed. The accent was put on production of military tires for trucks, airplanes and motorized equipment. Figures are not available on this production as yet but it was tremendous.

Production of civilian passenger car and truck tires declined during the war. In 1941, the last peacetime year, total output was 61,540,000 tires. In 1942 it dropped to 15,494,000 to rise again by 1945 to 44,100,000.

The CPA estimates production for 1946 at 79,000,000 tires of all types. The industry now has an annual capacity of 100,000,000 tires. Pre-war truck tire capacity was about 12,000,000. Now it is 20,000,000. Passenger car tire capacity has risen from the pre-war capacity of about 60,000,000 to near 80,000,000.

Total employment in tire factories increased from 66,000 in 1941 to 92,100 in 1944. In 1945 it dropped to 86,300 and the estimated employment for 1946 is 85,000. Man-hours of labor doubled between 1939 and the end of 1944 largely 'because the work week increased from 35 to 46.4 hours' during the period. However, the average work week had declined to 41.5 hours by August 1945. Complete figures are not available as yet, but the trend is plainly toward greatly increased production and a decline of man-hours.

The increased use of man-hours during the first three years of the war was largely necessitated by the change in the character of the product. 'The shift to heavy duty truck, bus and airplane tires, weighing 65 pounds and more compared with 22 pounds for the widely used 6.00-16 passenger tire and the increase in the use of tires with heavier tread explains the need for additional manpower.' Five new plants designed to produce heavy duty tires went into operation in 1945 under the expansion program authorized in 1943. In addition, new tire building machinery has been installed in a number of existing plants. So, the curve of man-hours must go down as the curve of production rises. The information and quotes used above are from *Domestic Commerce* and the *Survey of Current Business*.

Remember The Depression?

The pre-war peak of tire produc-

tion employment and man-hours occurred in 1928. In that year over 70,000,000 tires and inner tubes were produced; 65,100 wage earners were employed, and 142,088,000 man-hours of labor were used. By 1936 these figures had declined to about 53,000,000 tires, 40,400 wage earners and 68,766,000 man-hours of labor. On the face of it this looks like a declining trend all the way around. Closer analysis, however, reveals that while production dropped about 5 percent and total employment about 38 percent, the actual number of man-hours of labor bought and paid for decreased about 49 percent.

Let us re-emphasize that the number of wage earners employed is irrelevant. It would have been entirely feasible for the tire industry to maintain the total number employed between 1928 and 1936 at 65,100 while at the same time reducing man-hours of labor 49 percent. If all you want is jobs, all you have to do is divide up the work. Then you have to reduce average hourly wages, otherwise unit costs of production rise too high and you go out of business altogether.

The factor which made it possible to dispense with half the man-hours of labor in 1936, as compared to 1928, while suffering only a 25 percent reduction in production, was the increasing productivity of labor, as reflected in the output per man-hour. Taking 1929 to equal 100, production stood at 103.2 percent of that in 1928. By 1936 it had dropped to 91.3 percent. In 1928 man-hours stood at 103.6 of the 1929 level but dropped to 50.1 percent by 1936. Output per man-hour, however, rose from 99.6 percent in 1928 to 182.2 percent of the 1929 level by 1936.

This picture is typical of American technology. Here we have an industry

becoming more concentrated all the time and applying technology on an effective scale. TNEC Monograph No. 22 says of the tire industry: "The automobile tire industry is an example of the increase in labor productivity through the gradual but constant introduction of numerous, small detailed innovations in the productive process." Monograph No. 22 states that except for one major change, the replacement of the core process by the flat drum process, these changes have been minor. Their cumulative effect, however, has been great. Appended to the report is a list of 16 innovations in just two plants, which innovations displaced a total of 211 workers on each shift. In six representative tire plants, there was a technological displacement of 28,189,000 man-hours of labor between 1922 and 1931. While this process was going on, production rose until at the end of the period it had more than doubled. The sources of the information used above were the N.R.P., the *Statistical Abstract* and the T.N.E.C. report.

'Nothing Rolls Like a Ball'

This is the real American way in production, i.e., more output with less work. The prospect for the future spells out more and larger doses of the same.

The impact of technology continues in the Rubber Products Industry as a whole. A report of the Subcommittee on War Mobilization, published in May 1945, entitled *War-time Technological Developments*, lists dozens of new processes which affect both branches of the Rubber Products Industry. Such innovations as tires that will not skid on ice, tires good for 100,000 miles, Butyl inner tubes, electronic vulcanization of rubber to replace the slower steam process, etc., will have their impact

in the industry. In some cases, new jobs may be created but more old jobs will be eliminated.

One outstanding new technological development announced recently promises to slaughter jobs on a really effective scale. It was announced by the General Tire and Rubber Company with the assertion that the rubber industry stands 'on the threshold of a new and revolutionary era in tire manufacturing.' The development referred to is an automatic machine that will turn out one passenger car tire every two minutes. Operated at full capacity on four six-hour shifts, the machine will turn out 720 tires a day.

The device requires the attention of three persons only, an operator and two assistants. Business Week reports that 'a pushbutton activates a rotating cylinder around which the tire is built. Tread material is automatically dropped into position from overhead rolls. The only steps in the process which require human hands are placing the beads in position at the start of the process, ripping the fabric on the bias, cutting the breaker strip, and removing the tire from the machine.' Its output is 'more than twice the output of any other machine in the industry, more than five times the average output by the old hand-made method.' The machine 'eliminates the need for skilled labor, reduces the percentage of rejections, and makes a more uniformly perfect tire.'

Five of the new automatic machines are already in operation in Akron plants. Operating 360 days a year, these five units, each making 720 tires a day, can turn out over 1,000,000 tires. If we need 80,000,000 tires a year, then 400 of these machines each employing only 12 men a day for a total of 4800 workers could supply

them. The total of man-hours of labor per year necessary would be 10,368,000, since each unit requires only 72 per day. Compare this with the prewar peak of 142,088,000 man-hours used in 1928 and you get an approximation of the scope of technological displacement possible with this new process.

'I Got Plenty of Troubles'

Of course, there aren't 400 of these machines in existence, but that's not the point. There are five of them in actual operation and the other 395 can be built if and when necessary. The point is that there is a unidirectional and irreversible trend of technological displacement of labor in operation. The point is that the 'tycoons' of the rubber tire industry already have an unanswerable answer to the challenge of labor unionism. The rubber worker of America is up against the irresistible power of technology. This power can be used to displace man-hours of labor, eliminate skills and reduce employment opportunities.

Under the tyranny and regimentation of the Price System, the rubber worker can depend upon it that things will work out that way. Don't get us wrong on this. Technocracy is not against labor. We are merely giving an accurate and objective report of how the impact of technology has affected, is affecting and will affect the rubber worker. Labor unionism is necessary to obtain immediate economic benefits and to retain as much of what has been gained as is possible. It does not and cannot hold the long-range solution to the social problem of the rubber worker.

That solution is a part of the solution of the social problem of all North Americans. The same trend illustrated in this story is at work

in all industry. North America is a technological unity. The owners of industry, the bosses, are caught up in that trend as well as the workers. Due to the nature of the Price System structure and its rules of operation, it is imperative to install ever more and more technology. Neither bosses nor workers created the Price System. It just grew into the thing it is today. Neither bosses nor workers can do much about it except to obey its rules of operation or else become a public charge.

The muddling political methods, characteristic of our oxcart principles of social control, cannot solve North America's social problem. Their clumsy ineptness becomes more pronounced as our technological civilization grows more complex. The pressure tactics of minority groups can only transfer a part of the 'take' temporarily from one group to another. Neither fascism, communism, or middle of the road ism will avail. A technological civilization must be operated by technological methods, or else revert to a simpler culture which can be operated by Price System methods.

It Never Happened Before

The social problem of North America is unique in that the present technological nature of our culture was developed within the framework of a Price System. This happened in the last 170 years. Technology is straining at the bounds set upon it by the Price System. Nearly all the worthwhile things in modern America came about as a result of the impact of science and technology. Nearly all of its social maladjustments are caused by the interference control of Price System methods of operation. *Technology must be freed.*

This is the cue for the rubber worker, as it is for all other citizens

of North America. The social problem of every individual citizen is the same. What shall we do to live? The Price System can never solve it for all citizens, only for the sharpest chiselers. That's the way a Price System works. The rubber worker can never divorce himself from the collective nature of our social problem. There is no escape anywhere. Science and technology have made us one. Even the 'tycoons' of the rubber industry cannot escape. Technology has them by the throat.

The Price System will muddle along and get worse. The rubber industry will also muddle along. The rubber worker up-to-date has been doing his share of the muddling too. Why continue to muddle around? It's totally unnecessary. There is a solution to

the social problem of the rubber worker, to the industrial problems of the rubber industry and to the collective problem of all North Americans. There is a common denominator. Technocracy has the answer.

Mr. Rubber Worker, when are you going to wake up? And you, Mrs. Rubber Worker, you compose 37 percent of all the employees making rubber products. When will you realize that the Price System holds nothing for you except an increasingly precarious form of wage slavery. Call on your friends, the Technocrats. Challenge them to explain the solution to our common social problem. Don't be sidetracked by the propaganda of the Price System. It never got anybody anything but hard knocks. INVESTIGATE TECHNOCRACY!

Give Thanks for Energy

The world's largest dragline was put into operation recently near Bartow, Florida, in the phosphate mines. The device is called the 'Bigger Digger.' It weighs 1250 tons and required 54 railroad flat cars to ship the component parts from the factory in Ohio. The bucket alone weighs 40 tons. It swings from a 225 foot long beam and bites off 30 tons of earth at a time. 'The money and time saving economies of the machine are obvious.' (*Tampa Tribune*, January 4, 1946.) Ed. Note: This sure looks like one of those 'labor assistance' devices the public relations semanticists of corporate enterprise are now talking about. It will 'assist' many a shovel still off the job.

The shoes on your feet took about an hour to make. That's the average rate per pair per worker. It's 20 times the speed in Civil War days, when leather soles had to be attached to uppers by hand methods.—From a release of the *Sole Leather*

Bureau of the Tanner's Council of America. (*Chicago Daily News*, January 18, 1946.)

Who'd ever think that three husky Schenectady policemen would wear themselves out trying to do the job usually done by one small G-E timer? That's just what happened when the timer that controls the changing of traffic lights and the length of time they stay on became damaged and was returned to the West Lynn Works for repairs.

The G-E timer was removed from one of the busiest intersections in Schenectady, and manpower was substituted. Before the repaired equipment could be returned, two policemen had gone to the Chief of Police and had begged for transfers to 'any other beat in town.' The third cop, when the timer was finally rushed to the spot, said: 'Thanks, boys.. I'm going over to the cathedral now and give thanks for coming out of this alive.' (*G. E. News Digest*, Autumn 1945.)

Technology Marches On

Try To Stop Me Now

By Research Division 8741-1

Illinois Coal Mining

'If my memory serves me correctly, and I think it does, the year 1920 would be considered in the pre-mechanization period or pre-modernization period. In 1920 practically all coal was being loaded by hand. Much of the gathering was done by mules. The only mechanized methods then in use that remain today are the undercutting machine—and the use of battery or reel locomotives for gathering which was just getting under swing in many mines. Practically all tonnage in the State of Illinois was procured from deep shaft operations.

'The year (1920) was also just the beginning of strip operations and then only 367,000 tons (of an illy prepared product) out of 72,000,000

tons came from the open pits. Compare this to the 1944 figure wherein strip operations produced 17,000,000 tons of excellently prepared coal out of approximately 74,000,000 tons of bituminous coal produced in the State of Illinois. This same period saw the mechanically mined coal in deep-shaft operations go from zero to over 90 percent of production.

'The following table shows a comparison in the number of mines, men employed, and tons produced in the years 1920 and 1944. These figures cover only the shipping mines, which produce over 95 percent of the State's output and do not include the so-called "local mines," which in 1944 produced approximately 3,500,000 tons.

Year	No. of Shipping Mines	Men Employed	Tons Produced
1920	373	85,000	72,409,000
1944	157	29,000	73,958,000
	—216	—56,000	+ 1,549,000

'In summing up the changes during the past 25 years, the development of stripping methods—and the utilization of modern machinery to replace manual methods, are the outstanding items. These improvements have made it necessary to utilize skilled employees in the mining of coal, similar to the skilled employees utilized in manufacturing plants. The modern miner is now a skilled machine operator or a skilled mechanic.' (W. J. Jenkins, President and General Manager, The Consolidated Coal Company, in *Mining Congress Journal*, September 1945).

Ed. Note: See *Technocracy Study Course*, pages 114, 115 and 116.

Cotton Picking

A recent mechanical cotton picking machine demonstration in York Co., S.C., attracted a large gathering of planters from both North and South Carolina. At the York Co. demonstration the device picked 800 pounds of seed cotton in thirty-six minutes, or as much as four hand pickers could turn out in an entire day. The machine costs around \$5,000, with the tractor which pulls it. Large scale

planters will have no difficulty buying them and it was said that less affluent ones will band together to acquire one. (*New York Times*, December 2, 1945.)

Resistance to mechanical cotton pickers is based chiefly on the fact that they lower the grade of cotton by garnering leaves and stems. (Grade means the condition of the fibre after it is harvested; quality means the length and uniformity of the individual strands of cotton and the uniformity of all the strands in a whole bale). The Agriculture Department points out that the quality of cotton has been increasing steadily the last few years because of better seeds and improved plants.

Despite these improved plants the gins are turning out a lower grade of cotton because of two factors. 1) There has been a shortage of field hands since the war started so cotton stays in the field after the bolls open and gets weather beaten. 2) Inexperienced pickers gather trash and dirt along with cotton so the ginner has to beat the cotton to pieces to get it clean. Advocates of machine picking say this condition is lessening resistance to the machine because at least the machine gets the cotton in out of the weather. Thus, a negative physical condition is actually assisting the introduction of a new technological process.

However, there are positive physical factors at work also. The latest dusting material helps the picking machines. Powdered calcium cyanimid kills cotton leaves in 48 hours. They shrivel to nothing while the rest of the plant is not affected but grows on. When the sun strikes the bolls, they all open at once, instead of taking days or weeks. This leaves a clean field for the picking machine to operate in.

Other machines assisting the mechanization of cotton are the flame cultivator and the mechanical chopper. The flame cultivator destroys all weeds in a cotton field without harming the woody stem of the cotton plant. Chopping is the process of thinning out the small plants after it can be seen how thick a stand has started to grow. Mechanical choppers come in one row and three row sizes. The one row machine displaces 40 field hands and the three row machine lets out 120. International Harvester has built 115 cotton picking machines since 1942. Last year they built 75 and are planning for 100 in 1946. (*Wall Street Journal*, December 4 and 24, 1945.) *Ed note:* See *Man-Hours and Distribution*, bottom of page 20, page 21 and top two-thirds of page 22.

Plastics

A new fully automatic forming machine for producing transparent thermoplastic containers by the drawing method makes possible an increase in the productivity of a worker from a prewar level of 10 pieces per minute to 400 or 500 pieces per minute. The new machine produces 90 containers a minute, a speed more than 4 times that of the best semi-automatic machines. One unskilled operator can tend from 4 to 6 machines. By means of a cam-action press, the machine duplicates the motion of hand-drawing. In fact, the special feature of the machine is its reproduction of the double hesitation movement of the manual stroke. The machines are now in use at the Celanese Plastics Corporation, Newark, N.J., and are manufactured by F. L. Smythe Machine Company, Inc. (*Modern Plastics*, June 1945.) *Ed Note:* See *Introduction to Technocracy*, second paragraph, page 19.

Each in His Own Tongue

By Publications Division 8741-1

Voice Of The Price System

Labor Problem Solution

The task of creating jobs simmers down to creating wants, and wants are created by selling.

Arthur H. Motley, publisher of *American Magazine*, to a luncheon meeting in Hotel Cleveland at a one-day 'brass tacks' panel discussion on distribution sponsored by N.A.M. (as reported in the *Cleveland Plain Dealer*, October 4, 1945).

Axe and Cherry Tree History

It's a long story, but the gist of it is that Big Business threw itself, without thought of profit, wholeheartedly into war production.

James Truslow Adams in his book *Big Business In A Democracy* (as reported in the *New Republic*, September 17, 1945).

This Is Economics

I object to headlong wage demands because the union's tendency is to lessen production. At one time American railroads had 2 million employes. Just before the war there were 1 million because wage increases had forced railroad rates so high that business was going to buses, trucks and other competitors.

Dr. Wilford Isbell King, professor of economics at New York University, to a press conference preceding a luncheon meeting of the Chicago Rotary Club (as reported in the *Chicago Tribune*, Sept. 26, 1945).

Political Magic

We have torn from the earth copper, petroleum, iron ore, tungsten and every other mineral required to fight a war without regard to future supplies . . . We must proceed with all possible diligence not merely to restore these depleted resources to their pre-war standards, but to make them greater and richer than ever before.

President Harry S. Truman, in a recent speech (as quoted in the column Inside Washington in the *Chicago Sun*, January 2, 1946).

Ragged Individualism

Hitler's Germany would be a kindergarten compared with the tyranny that would develop in any country that provided jobs for all. Only as men and women rustle their own jobs, will they remain independent.

From *Safety Valve*, house organ of the Freedom Oil Company, Freedom, Penn. (as quoted in *The New Republic*, November 19, 1945).

Nobility of Labor

The first step in the downfall of France was the thirty-hour week. America cannot become a nation of drones and maintain our future economic stability.

U. S. Senator Harry F. Byrd (Dem. Va.) in opposing the McCarran bill to reduce the hours of 3,000,000 Federal employees from 40 to 30 a week at the same pay (as reported in the

New York Times, September 9, 1945).

Business Semantics

Let us at the same time, be alert against proposals for the establishment of new peace-time controls bearing such alluring but deceptive labels as 'full employment,' 'security,' 'stability,' 'fair competition,' and 'orderly development.' Such euphemistic phraseology is sheep's clothing hiding wolves of collectivism and national socialism.

J. Howard Pew, president of the Sun Oil Company at a joint dinner of the Service Clubs of Chester, Pa. (as reported in the *Wall Street Journal*, Nov. 28, 1945).

Buried Patents Dept.

His title is exclusive, and so clearly within the constitutional provisions in respect of private property that he is neither bound to use his discovery himself, nor permit others to use it.

The public has no right to compel the use of patented devices or of unpatented devices

when that is inconsistent with fundamental rules of property.

The first sentence is from a decision of the Supreme Court in 1896. The second is from another decision of the court in 1909, reaffirming its decision of 1896 (as reported in *Economics of our Patent System*, a book by F. L. Vaughn).

Medieval Authoritarianism

If the State has the right to punish treason with death, the principle is the same that concedes to the spiritual authority the power of capital punishment over the Arch-traitor to truth and Divine relation. A perfect society has the right to its existence . . . and the power of capital punishment is acknowledged for a perfect society. Now, the Catholic (Roman) Church is a perfect society, and as such has the right and power to take means to safeguard its existence.

From the *Tablet*, official newspaper of the Roman Catholic diocese of Brooklyn, N.Y., Nov. 5, 1938 (as quoted by *The Converted Catholic*, December, 1945).

Voice of Technology

Neither Do We

I do not see upon the immediate technological horizon any new development which will give the same vast stimulus to private enterprise as did the railroads, automobiles, electric power, and the radio.

Henry A. Wallace, Secretary of Commerce, in an article in the *Chicago Sun*, December 6, 1945

Energy Certificate Needed

In an economic organization in which goods and services may become available anywhere almost without limit, with less and less labor of muscle or mind, the values put on effort, time, thrift, money and property must change.

If you consider current ideas about wages, prices and property-

ment, it must be plain already that, as the age of alchemy advances, some other way of distributing the products of industry for consumption or use than by means of money wages, interest, dividends or profits which are proportionate to time, effort, thrift or enterprise, or to collective bargainning, must be invented, for none of the formulas of the machine age fit the frame of the future.

Dr. Virgil Jordan, president of the National Industrial Conference Board in a luncheon address to the Associated Industries of Alabama at the Tutwiler Hotel in Birmingham, November 1, 1945 (as reported in the *Birmingham News*, Nov. 2, 1945).

They're Not All Brass Hats

We didn't fight this war to maintain the status quo in the world. We fought it to get something a damn sight better. If I didn't believe that a strong United States was the biggest contribution we could make to world peace, I wouldn't keep this job five minutes.

General of the Army, and Chief of Staff, Dwight D. Eisenhower, as quoted in an article by Cabell Phillips in the *New York Times Magazine*, December 23, 1945).

Once Burned, Twice Shy

It is strange that certain of our newspapers are playing on old imperialistic themes in some sections of the country and saying that our allies, with whom we won the war, cannot remain together to win the peace. If I were a Russian with the history

that Russia has faced since the revolution, I too would be suspicious of the United States and Great Britain.

Bishop G. Bromley Oxnam, of the Methodist Church, to 1500 members of the Protestant Teachers Association at their annual club luncheon in the Grand Ballroom of the Hotel Astor, New York, Nov. 17, 1945 (as reported in the *New York Times*, Nov. 18, 1945).

Ape and Machine

Our technologies have far outrun both our moral sense and our social organization. Our wisdom about ends does not match our skill about means, and a great gulf has opened between our engineering and our ethics, between our knowledge and our ways of life.

Some of us are still fighting for a social order to which the atomic bomb makes it impossible for us to return. We are more concerned about preserving the contours of the past than we are about discovering the necessities of the future.

Of course, social change is not a painless operation. It involves a break with old traditions and habits, which to many minds seem intolerable. But this is the price of human survival. The question today is not whether we shall slough off modes of thinking that have suddenly become obsolete. The one vital question is whether we can change our ideas and institutions fast enough***.

Raymond B. Fosdick in an article in the *New York Times Magazine*, Dec. 30, 1945.

The Scientific Method

It is the study of science and that alone, which enables us to observe our surroundings clearly, to perceive their inter-relations, and to derive valid and useful conclusions concerning them.

It is only through science study that we can acquire that most valuable of mental habits, the scientific approach. The merest beginner in science soon learns that preconceptions, personal bias, and wishful thinking have no place in the laboratory, and that each problem must be approached with an open mind, subject to no influence but that of established fact.

Could that approach be learned by the majority of men and maintained in the affairs of daily life, how many of our political

and social problems would be solved, and how soon the demagogue and political sophist would disappear.

L. A. Hawkins of General Electric Research Department in the *General Electric Review*, August 1945.

The Triple Alliance

We suggest that religious youth look behind the superstition and emotion behind Youth for Christ with its emphasis against science, education and governmental control for a scheme sponsored by reactionary business and political interests to prevent youth from helping to correct some of the social, political and economic ills of our society.

Part of a resolution released by the Midwest American United Youth Conference after its recent meeting at Lake Geneva, Wis. (as reported in the *Chicago Sun*, August 18, 1945).

Tally These Up Too

The American steel industry can today produce in 75 minutes an amount equivalent to its total output in the entire year of 1860. (*Steel Facts*, December 1945.)

A new piece of agricultural machinery, called the Pacific Landplane, is capable of smoothing plowed land at the rate of 4 to 5 acres an hour. The machine is intended for use on irrigated farms, its purpose being to break up lumps and thereby slow down the evaporation of water. The Pacific Supply Co., Los Angeles, manufacturers of the big leveler, claims that its use reduces water needs 5 to 33 per cent, saves labor and maintenance costs by allowing wider spacing of irrigation ditches, and also improves soil fertility.—*Business Week*, May 12, 1945.

High-speed raisins are the latest triumph of electronics in food processing. In California tests, infra-red heat dried raisins in seven minutes, compared to 17 hours by the usual heated-air method. Infra-red equipment costs less, and the fruit retains more flavor and aroma.—*Wall Street Journal*, July 24, 1945.

Hubbellite, a cupriferous cement for surfacing floors, has been found roach repellent, according to investigations conducted at the Mellon Institute, Pittsburgh. The cement was effective against all three species of roach, German, American and Oriental. This finding should be of value to builders of private houses and to food manufacturers, our armed forces, restaurants, hotels and institutions.—*Chemical Industries*, May 1945.

So Wags the World

Fascism (Social Reaction)

vs.

Anti-Fascism (Social Advancement)

By Research Staff of Great Lakes Technocrat

North America

United States

A well organized Nazi underground movement is operating in Chicago and throughout the rest of the United States, asserted Dewey G. Hutchinson, district counsel in Chicago for the Immigration and Naturalization Service of the Department of Justice, in a recent interview. 'We have evidence,' he said, 'that many of the members of the German-American Bund throughout the country organized "singing societies," or joined existing ones, which were not more than subterfuges.'

He said that some of the Societies immediately changed their constitutions to conform to Nazi ideologies. Asked the extent of the underground movement, Hutchinson replied, 'that's hard to tell. There are many thousands of them.' He added that, 'There is no longer any doubt but that the entire movement, both in its open and secret phases, has been and is being directed from Germany. The interview was dated October 15, 1945.'

Spruille Braden, Assistant Secretary of State and former ambassador to Argentina, in an interview recently said:

The ideological and social tensions of Europe, systematically aggravated by Nazism, far from diminishing with the end of hostilities, are now appearing in our own hemisphere, deliberately transplanted here from foreign sources.

He did not elaborate.

P. C. Keith, a top chemical engineer, has developed a method for converting natural gas into gasoline. Diesel oil, alcohol and a dozen other chemical by-products. The method is called the Hydrocol process. It will make gasoline at a price low enough to compete with that obtained from petroleum.

Many years ago chemists developed the method of manufacturing illuminating gas by blasting steam over incandescent coal.

In 1923 the Tropsch-Fisher process for converting manufactured gas into gasoline was developed in Germany. In 1933 the first synthetic gasoline plant was built in Germany. This gasoline was expensive and required doctoring because it had an octane rating of only 40.

Keith visited a number of these plants in Germany before the war. It occurred to him that natural gas might be a better source for synthetic gasoline. Natural gas is composed of 90 percent methane gas combined with ethane, propane and butane. Methane gas is also generated in marshes, sewers and human intestines. When methane is burned in an atmosphere of pure oxygen, two gases result, carbon monoxide and hydrogen. These are the building blocks for synthetic gasoline.

A method was developed for extracting enormous quantities of pure oxygen from the air. In the reaction process, the carbon monoxide and hydrogen from methane combine, in

the presence of a catalyst, to make gasoline and water. Tremendous quantities of heat are generated in the process. The reaction chamber is honeycombed with water tubes. The waste heat converts the water into steam which is used to generate power to operate compressors and other equipment.

A pilot plant was built at Olean, N. Y. It performed as planned. Ten gallons of gasoline a day was produced. Then a larger demonstration plant was built which turned out 10 barrels a day. Work is now complete on drawings for a commercial plant in Louisiana in the heart of the Carthage gas field 40 miles southwest of Shreveport. The plant will produce 5,000 barrels of gasoline per day and 1,000 barrels of Diesel oil, plus 200,000 pounds of crude alcohol. The plant will use 65,000,000 cubic feet of natural gas and 40,000,000 cubic feet of oxygen a day. The gasoline is of 80 octane quality.

It is estimated that the United States has a visible supply of 100 trillion cubic feet of natural gas and an equally large reserve supply. Current consumption of natural gas is about 3 trillion feet a year. If these figures are correct, we have a visible supply of natural gas, at current consumption rates, for about 67 years.

Said chemist P. C. Keith: 'If you are not worried about costs we can make gasoline out of hay or corn-cobs, or even water lilies.' (*Ed. Note:* See how the factor of cost, i.e., the Price System, interferes with technology? In spite of the Price System, however, Technology Marches On ever adding to America's available supply of energy. A salute to the technologist who developed the Hydrocol Process.

Canada

A tremendous scandal is boiling

under the lid in Canada. It involves alleged irregularities in the sale of uranium ore from the Eldorado mines.

The Eldorado mines are on the shores of the Great Bear Lake, 1500 miles north of Seattle, and only 26 miles south of the Arctic Circle. The deposit was discovered in 1930. Until 1940 it was operated by the Eldorado Mining and Smelting Ltd. Its chief product was radium. Eldorado is one of only two known workable deposits of pitchblende, from which comes uranium and radium. The other is in the Belgian Congo. It is operated by Union Miniere du Haut Katanga. Production at Eldorado broke the Belgian world monopoly on radium.

Then a cartel agreement was negotiated between the two, under which the world's market was split on a 60-40 basis. The price of radium was stabilized at \$25,000 a gram. In 1940 the mine at Eldorado was closed down and deliberately flooded. Reasons given were an increasing body of ore and a dwindling market for radium.

In 1942 the mine was reopened under top priority for men and materials, as a part of the Manhattan Project to make atomic bombs. Early in 1944 the Canadian Government bought the property outright. It is alleged that in the intervening period the Eldorado Company diverted uranium from atom bomb uses to make greater profits by secret sales when they learned that the Government was going to take over. Several corporations and 50 persons are under investigation.

Among them is one Boris Pregel of New York, a former sales agent of Eldorado and the Belgian Radium Syndicate. He negotiated the cartel deal noted previously. Carl B. French, Secretary of Eldorado, was arrested

recently on charges that he falsified the company's books and took secret commissions.

Detailed charges have never been made public but it is said that the company diverted uranium to an unnamed 'uranium cartel.' The list of persons being investigated includes Canadian and American names. J. G. Glassco, a Toronto accountant, was appointed by an 'order-in-council' to investigate the charges. He was given wide powers and even authorized 'to use force' if necessary to get the facts.

The Ontario Hydro-Electric Power Commission will begin harnessing the Rapides des Joachims on the upper Ottawa River this spring. The project involves construction of a dam

2,500 feet long and 135 feet high. It will produce about 400,000 horsepower. The project is a part of the rural electrification program of Hydro, which is designed to raise the number of farms in Ontario within reach of electric power from the present 55 percent to 85 percent. The program includes rural distribution lines and the construction of primary and secondary stations. The main dam of the des Joachim unit will back the Ottawa River up to form a lake about 70 miles long and a mile wide. When completed, Hydro will have a total installed capacity of 3,060,000 horsepower. Up to the end of 1944, the total hydro-electric power capacity of all Canada was 10,283,213 horsepower. One-fifth of it has been installed in the last 5 years.

South Of The Rio Grande

Argentina

On November 17, 1945, Colonel Peron's afternoon newspaper *La Epoca* at Buenos Aires came out with a special announcement, which read: 'Argentine Catholics (Roman) must not Vote for the Enemies of Christ.' It stated further that the Catholic Clergy would read a special pastoral letter in every church in the country on the following day.

The pastoral letter read in all churches the next day was signed by Cardinal Louis Santiago Copello and several Archbishops. It warned that: 'No Catholic may become a member of a party or vote for candidates whose platform or principles advocate' separation of church and state, suppression of religious instruction in schools and institution of exclusively lay instruction, suppression of the oath by God and Country, and divorce.

In churches throughout Buenos Aires, women got up from their seats and left when the pastoral letter was read. In the Church of Immaculate Conception in rich Belgrano District, Father Virgilio Filippo openly exhorted his congregation to support Peron for the Presidency. About 30 well-dressed women got up and walked to one side of the church. They began to say the rosary and prayed that 'Father Filippo be saved from this period of spiritual blindness.'

He ordered two men from Catholic Action, each wearing a Peron button, to quiet the women. They refused to be still, then other men joined the first two. They pushed the women out on the sidewalk, with insulting remarks. Father Gallard, an assistant to Father Filippo, appeared at this point. One woman, Eugenia Silveyra de Oyuela, an author of many outspoken articles in the weekly *Antinazi*

told him: 'We come to Church to pray, not to listen to politics.'

Father Gallardo snapped back: 'If what bothers you in politics is a possible dictatorship, you'll have to be silent, because Jesus Christ himself was the great dictator.' Then he added: *'If you want what happened in Spain, you'll get what happened in Spain.'* (Italics ours)

Some of the congregation insisted that the protesting women be arrested. The police were called. One woman berated an officer because he seemed hesitant, 'Are you too cowardly to shoot them down?' The women were hauled to the police station. The commissar dismissed them, saying it was a matter for the Curia to handle, since it happened in a Church. Father Gallardo had gone along to the police station to press charges.

The Parish Board was contacted. They backed up Father Gallardo by saying that he had shown 'great Christian forbearance.' They voted to turn the case back to the police. Police Chief Velasco constituting himself a magistrate under Argentine law, fined three of the women 20 pesos and sentenced them to 6 days in the notorious prostitutes' home, Asilo San Miquel.

Brazil

In the last 10 years Brazil has completed one of the big engineering feats of modern times. This was draining and reclaiming the malaria ridden Baixaida Flumenense swamplands that formerly almost surrounded Rio de Janeiro. The lowlands reclaimed total 2000 square miles. This area is 17 times as large as the famous Pontine Marshes near Rome, Italy, the draining of which was the only constructive thing accomplished by Mussolini's regime in 21 years.

A new airplane motor factory has been built in the reclaimed area. Orchards, truck gardens, farms, villages and towns have grown where the mosquito formerly held sway. Brazil has several other projects larger than Baixaida well along toward completion.

In the northwest state of Cerea a dam and road building program is designed to overcome the dustbowl characteristics of that area. In the northeast, in the Sao Francisco Valley area Brazil is getting ready to harness Paulo. Alphonso waterfalls. They are said to be a little higher and of more volume than Niagara Falls. In the far south of Brazil it is proposed to build a TVA system to provide power, irrigation and water control for a large area.

Europe

Germany

A subcommittee on war mobilization of the Senate military affairs committee has been investigating conditions in Germany. The committee's report, recently issued shows that a minimum of 75 percent of German industry either escaped any war destruction or is easily repairable. I. G.

Farbenindustrie, a giant chemical combine is 87 percent intact. Colonel Bernard Bernstein, director of the division of investigation of cartels and external assets of the A.M.G. in Germany warned the committee, 'If it is our policy to see that German industrial capacity is reduced, then we must take action now.' Bernard said that although orders signed by General of

- the Army Eisenhower had been issued to destroy war plants no Farben plants had been touched.

In Berlin, Russel A. Nixon, deputy director under Bernstein said that A.M.G. authorities in the American zone were 'pampering German industrialists.' He also said that German industries were not being destroyed and that many industrialists were not being arrested in spite of a directive of the joint chiefs of staff. He complained that 'pressure' had forced his division to release from jails a number of I. G. Farben officials recently arrested.

Shortly after V.E. Day the U. S. Bureau of Mines sent four solid fuels technicians to Germany to collect records and do research work on German mining methods. Dr. R. R. Sayers, director of the Bureau recently revealed some of their findings. A radically new type of coal mining machine enabled the Nazis to meet all war-time coal needs as well as normal exports to satellite countries. The machine is called a coal planer. It eliminates the jobs of cutting, drilling, blasting and loading coal.

The device is a plow-like machine and works on the principle of a carpenter's plane. One unit is capable of mining 800 tons of coal daily. The coal planer is only practicable where there is a long wall of coal. Two units are operated in tandem, one facing each way. The device is pulled along the coal face by cables operated from electric or compressed air hoists. As it travels along it takes a 12 inch slice from the lower third of the seam. The upper two thirds of the seam then caves in over the planer and onto the chain conveyor loading trough.

The two unit planer shuttles back and forth along the seam. Each unit has a manganese steel cutting blade and loading conveyor facing in opposite directions. It is said that coal was broken so rapidly with the planer that great difficulties were encountered in keeping up with accompanying work such as timbering, backfilling and hauling the coal away. A coal planer can only be used where the seam is solid coal with no rock partings or dividers to prevent the upper two thirds of the seam from collapsing as it is undermined by the cutting blade.

Asia

China

The government of Chiang Kai-shek maintains a blacklist of American foreign correspondents who have criticized its policies. The list is kept up to date and distributed to Chinese embassies throughout the world.

Among those on the list are Edgar Snow, Mark Gayn, Hanson Baldwin, Harrison Forman, Drew Pearson, Agnes Smedley, Guenther Stein, Raymond Swing, Brooks Atkinson, Sam Lubell, Darrel Berrigan and Harold Isaacs.

The U. S. State Department has proclaimed its avowed policy as being one of relying on American foreign correspondents to be the eyes and ears of the American people. However, there is a blacklist on those who dare to write the facts about the 'incomplete fascism of Chiang Kai-shek.'

About 600,000 Chinese quisling soldiers who fought with the Japanese against their own country have bought immunity from treason by being absorbed into the Nationalist forces to

fight against the Chinese democrats (called communists).

The principle is the same as that employed by Britain in taking the Greek quisling battalions who fought with the Nazis against the Greek partisans and incorporating them into the Greek Nationalist army.

The Chungking press claims that

scores will be settled with the collaborationists some day, after the civil war ends. One correspondent commenting on this wrote: 'When China gets around to court-martialing its renegade Generals and pro-Jap army officers, they will all be wearing Allied campaign ribbons as they step into the prisoner's dock.'

Australia

An industrial expansion program is under way in Australia. Steel production will be stepped up first. Prior to the war steel ingot capacity at Broken Hill was 2,000,000 tons a year. This has been increased by new electric furnaces. Ferro alloy plants, milling machines, heading and forging presses and other new fabricating facilities have been built. A magnesium plant constructed for war purposes has a capacity greater than Australia can use. The Broken Hill group of industries has already exported quantities of railroad equipment to India including assembled wheels, tires, and axles. Other export markets are being surveyed in Malaya, Nether-

lands East Indies, New Zealand and China.

The present program includes four projects:

1. Opening of new mines and construction of a new port on Cockatoo island in northwest Australia;
2. Construction of four 12,500 ton ore carriers at Whyalla;
3. Building of a new battery of modern by-product 'coke ovens, and new 10 inch rod, merchant bar and strip rolling mill at Port Kemble; Mechanization with Australian-built machinery of the Bulli and Newcastle coal fields. Australia has an adequate supply of iron ore and coal available at home and on nearby islands.

Energy Certificate Needed

'We in America have moved steadily from a technology of manufacture to one of transmutations from an economy shaped by voluntary competitive production to one of compulsory, collective consumption shaped by the powers of the state.

'When work and even mental labor is worth so little or is so unnecessary in industrial production that the distribution of the product cannot be related to employment, the main economic problem probably will be to get the product consumed and the main political problem to

keep the people occupied and amused.'—Dr. Virgil Jordan, President of the National Industrial Conference Board at the 52nd annual convention of the Ohio Chamber of Commerce. (As reported in the *Cleveland Plain Dealer*, December 15, 1945.)

'America is going through a moronization proces.'—Dr. Norman E. Hines, professor of sociology at Colgate University. (As quoted in *The Messenger*, November 1945.)

In the Question Box

By Speakers' Division, 8741-1

Will the use of atomic energy for commodity production change the energy value of units of that commodity? B. R. S.

Not at all. Energy is energy. There is only one kind of energy, whether it is derived from the molecular fission of coal, oil, gas, or wood, from the power of falling water, from the radiation of the Sun, from the movement of winds, from the muscles of man or beast or from the fission of the atom.

Energy is the capacity to perform work. Regardless of the source, or form, from which it is derived it is all measureable in the same units, such as ergs, joules, foot pounds or kilowatt-hours. The energy may be converted from one form to another and the yardsticks by which it is measured are constant and also convertible into each other.

In a system of technological control, wherein physical costs of accounting are used, the cost of a commodity would not be determined by the particular form of energy used in its technofacturing. It would be arrived at from calculations based upon the total amount of all forms of energy available, minus the necessary deductions for maintenance and replacement of machinery, costs of distribution, etc. The amount of resources available for the production of any commodity would be a factor in its physical cost also. The only effect that atomic energy has in this picture is to add to an already abundant supply of energy. You might say there has been a quantitative change, but no qualitative change. Energy is energy.

Would it be easier to put a Technate program in to effect in a socialist country where production is used for all of its citizens, M. E. D.

The putting of technological control into effect in any country does not depend upon the state of its political ideology, but upon the state of its technological development. Obviously, you cannot put technological principles into effect in any country where there is little or no technology. In industrially backward areas, political, business and ecclesiastical methods of social control are used. Technological control is a technical and measureable method of operating a social system. Before this can be done, there must be something to measure. You can't measure natural scarcity. All you can do with it is evaluate it. When an area is gifted with sufficient resources and attains a degree of technological development, making possible the production of an abundance, then technological control becomes practical and not until then. So far, only the North American Continent has reached that state.

How can Technocracy take effect when the ownership of the means of production are in the hands of a few who are strongly entrenched with police, army and navy at their disposal, B. J. G.

I wouldn't worry too much about the police or the army and navy. That is thinking in concepts of the seizure of power. Technocracy has no theory about the assumption of power. Every government rests upon force. In the last analysis that force depends upon common consent. It has been demon-

strated many times in history that when a sufficient proportion of the population develop an urge to go in one direction at the same time, the force of government yields or melts away. This phenomenon does not occur until conditions become unbearable. Applying this to the American social problem, we can say that when the Price System can no longer function, the people will be driven to move.

Let's not delude ourselves with vain, political conspiracies about seizing power or effecting a violent overthrow of the system. If attempted and carried far enough, such action will result only in the great majority of Americans going down in the ruins of the system they are trying to overthrow. Modern technology is easily destroyed. Allow that to happen and we won't have any social problem to worry about for a long time, except natural scarcity. And most of us won't be left alive to worry about that.

The American social problem is how to preserve our technology and effect a peaceable transition into the New America. It can be done only if a sufficient number of Americans are correctly informed about the physical factors which are destroying the Price System. When this occurs, these citizens can then give the proper direction to the inevitable mass movement of the population, so that we can escape social chaos. That is what Technocracy is doing. The trouble will not be with the 2 percent who control society, but with the 98 percent. As many of them as possible must be correctly informed. What are you doing about it?

How do you expect Technocracy to come into operation? What is the first movement in the transition? T. G. W.

Regarding your first question, we will

state that you are evidently laboring under misconceived political concepts about 'taking over,' etc. Technocracy does not expect to ever come into operation as a minority group in control of the social system. There will be a major social change on this Continent wherein technological principles will take the place of Price System methods of social control. That is something different. Technocracy has stated many times that when a technological control is installed and in operation, the Organization of Technocracy Inc. will be disbanded. Technocracy is merely acting as a bellwether to point out the road to the New America. When we get there, the Technocratic self-assignment will be completed.

In regard to your second question, the first movement in the transition M U S T be the installation of *Total Conscription of Men, Machines, Materiel and Money, with National Service from All and Profits to None* It is absolutely necessary for the dual purpose of maintaining social order and working out a peaceable transition into technological control. There are no qualifications to this necessity. It is supremely important.

If we do not install Total Conscription first, the breakdown of the Price System may turn into a social debacle and end in general chaos. If we try to fight it out, then even God won't be able to help America. We are not living in the ages of 1776, 1789, 1860 or 1917. North America is in the Power Age. In the past social changes and changes in social control could be effected by violence only. In America, now, social change can only be effected peaceably. Any group advocating violence as a solution of social problems is guilty of treason. Total Conscription is the only sure preventive.

TECHNOCRACY

NORTH AMERICA'S ONLY SOCIAL DYNAMIC

WHAT?

★ Technocracy is the only North American social movement with a North American program which has become widespread on this continent. It has no affiliation with any other organization, group or association either in North America or elsewhere.

★ The basic unit of Technocracy is the chartered Section consisting of a minimum of 25 members and running up to several hundred.

★ It is not a commercial organization or a political party; it has no financial subsidy or endowment and has no debts. Technocracy is supported entirely by the dues and donations of its own members. The widespread membership activities of Technocracy are performed voluntarily; no royalties, commissions or bonuses are paid, and only a small full-time staff receives subsistence allowances. The annual dues are \$6.00 which are paid by the member to his local Section.

★ Members wear the chromium and vermillion insignia of Technocracy—the Monad, an ancient generic symbol signifying balance.

WHERE?

★ There are units and members of Technocracy in almost every State in the U. S. and in all Provinces in Canada, and in addition there are members in Alaska, Hawaii, Panama, Puerto Rico and in numerous other places with the Armed Forces.

★ Members of Technocracy are glad to travel many miles to discuss Technocracy's Victory Program with any interested people and Continental Headquarters will be pleased to inform anyone of the location of the nearest Technocracy unit.

WHEN?

★ Technocracy originated in the winter of 1918-1919 when Howard Scott formed a group of scientists, engineers and economists that became known in 1920 as the Technical Alliance—a research organization. In 1933 it was incorporated under the laws of the State of New York as a non-profit, non-political, non-sectarian membership organization. In 1934, Howard Scott, Director-in-Chief, made his first Continental lecture tour which laid the foundations of the present nation-wide membership organization. Since 1934 Technocracy has grown steadily without any spectacular spurts, revivals, collapses or rebirths. This is in spite of the fact that the press has generally 'held the lid' on Technocracy, until early in 1942 when it made the tremendous 'discovery' that Technocracy had been reborn suddenly full-fledged with all its members, headquarters, etc., in full swing!

WHO?

★ Technocracy was built in North America by North Americans. It is composed of North American citizens of all walks of life, Technocracy's membership is a composite of all the occupations, economic levels, races and religions which make up this continent. Membership is open only to North American citizens. Aliens, Asiatics and politicians are not eligible. (By politicians is meant those holding elective political office or active office in any political party.)

★ Doctor, lawyer, storekeeper, farmer, mechanic, teacher, preacher or housewife—as long as you are a patriotic North American—you are welcome in Technocracy

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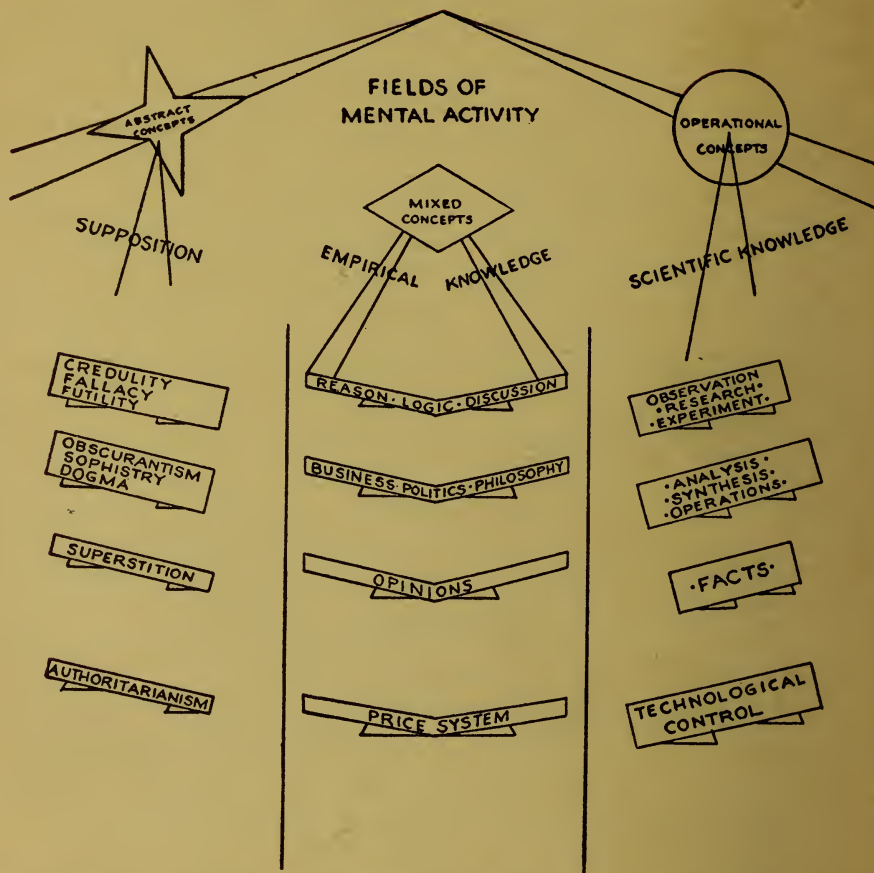
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A concept is an idea. Nearly all concepts fall broadly into three groups. Abstract Concepts have no physical properties in their makeup. They come and go, amorously, in that fictitious realm of the imagination. Operational Concepts have physical content. They are derived from things and events in our physical environment. One may perform experiments to show their reality. Mixed Concepts are a hash of abstract and operational ideas.

Abstract Concepts beget a body of apriori assumptions which may be defined as Supposition. Since Knowledge implies acquaintance with facts the ideology of Supposition is not Knowledge. It is an imaginary nothing. Mixed Concepts beget a compound of these imaginary nothings and some acquaintance with fact. This adulterated hash may be called Empirical Knowledge. Operational Concepts beget Scientific Knowledge. This is true Knowledge.

Supposition spawns a litter of maleficent frauds. Some are shown on the chart. The past was very rich in this moonshine. Empirical Knowledge breeds a profusion of counterfeit glitter. That is the Price System today. Scientific Knowledge parades forward with an army of facts. The future belongs to it.

The point of this is that in any projected solution of the American social dilemma today every attempted application of Abstract or Mixed Concepts must result in, first, futility, then a new Dark Age of political-industrial-clerical Authoritarianism. We must apply Operational Concepts to the American problem. It is our only hope. Anything else is Continental Treason.

GREAT LAKES TECHNOCRAT

May - June 1946

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A Fanciful Story of Fact

I am older than Written History or Social Life. I am even older than the ancient Price System. Yet, I am also younger than the latest Blueprint approved by the Patent Office or the last Gleaming Product rolling from today's Assembly Lines. Somewhere, I am dying every day, Decrepit and Outdated. Somewhere, every day, I am being born again, shining with New Efficiency and Greater Power.

From Age to Age I have been Man's Constant Companion. I am with You now, although You may not recognize me. As You travel along that untrod road leading into the Future I will also be there. You cannot Live without Me. I am that Force which is the essence of your Physical Relationship with your external Environment. I am an indivisible part of You and your long, tedious Social Progression. I Am Technology.

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I Am Technology

A Fanciful Story of Fact

by The Peripatetic Technocrat

The term Technology is used in this story with two meanings, one past and one present. The past meaning is in a general sense to include all human discovery, invention and progress in the fields of science and the industrial arts from primitive man down to now. This is the dictionary definition of Technology.

Near the end of the story the meaning shifts to the specific sense of the term as used by Technocracy in relation to the American social problem today. This is that Technology is a process of production which when once started itself then controls all further operations.

Since technological processes of production are barely 50 years old it is necessary to use both definitions in order to outline the underlying importance of Technology in social life and social change.

Whether in its earlier role of discovery, invention and progress in the pursuits of livelihood, or in its modern role as a process of production Technology is the means whereby men live, and have lived. The stage of development of Technology at any given period of history, plus or minus the degree of its application, has always determined the General Welfare of man. In the past this has always been low and it is very little higher today.

However, the present advanced stage of development of Technology constitutes a guarantee of much higher living standards for all as soon as Technology is freed from the restrictions of the Price System. As North America progresses deeper into the social dilemma of the Power Age an intelligent awareness of the vital role of Technology in social life has become a necessity without which civilized life cannot go on much longer. Here is our contribution. It is the autobiography of Technology written from within the framework of the Price System where it is still confined.

Record of the Rocks

When the creature that was to become Man was yet a running-climbing Ground Ape, still descending from his remote Arboreal Ancestry of the Mesozoic Era, I helped to make his perilous existence a little less perilous. I gave him his first Tools and Weapons. I taught him how to crack open nuts with Hand Rocks, how to pry up boulders with Stakes, in the search for insects, and how to use Sticks and Stones to add Power to his Bare Hands when striking blows.

That was in the Eocene Period, at the opening of the Cenozoic Era, many millions of years ago. Geologists have not yet found the Remains of my presence then, but the records of Paleontology indicate that I was already upon the scene before the first sub-men arrived.

I taught that low-skulled, walking sub-man, *Pithecanthropus erectus* how to chip rude Hammers, Knives and Flakers from flint, agate and quartz. That was in the Pliocene Period at the end of the Cenozoic Era, before the First Glacial Age, at least a half a million years ago. The proof of my presence then is scattered over the world embedded deep in the rocks. The mammoth, the giant beaver, the woolly rhinoceros and the sabretoothed tiger still hunted abroad. I was with Man already then, helping him to fight off his Enemies, to get more Food and to dispense occasionally with the necessity of playing Jackal to the more powerful beasts after they had finished gorging on their kill.

After this first proof of my Operations, the Scroll of the Rocks is blank.

A quarter of a million years unravelled from the tireless loom of Time. The First and Second Ice Ages intervened. The Cold crept down from the North. The Face of the Land changed. *Pithecanthropus erectus* vanished somewhere, in retreat before the Ruthless Cold. Twice the great sheets of Ice spread over a large part of the Earth. Twice they retreated. Then a Temperate Period came. It was now the Second Interglacial Age, the Pleistocene Period of the Cenozoic Era.

During this time both Man and I, Technology, staged a comeback. The Man of that period is known as *Homo Heidelbergensis*. He was a powerful Brute of gorilla-like proportions. My Implements then were much improved and bigger than those of the Pliocene. They consisted of stone Chopping Tools, Hammers, Rough Axes, Flakers and Knives. With these the Heidelberg Man waged precarious warfare against the Opposing Forces of his environment.

Again the Ice came down from the North and drove most life to Warmer Climates, where its traces have been lost. Man and I, Technology, disappeared from the Scene while infinite Time parcelled out over 3000 generations. Again a Temperate Period came, the Third Interglacial Age. Again we both came back to leave our record in the Rocks. That was a Hundred Thousand Years Ago. The Man of that time is known as *Eanthropus*, the Dawn Man. This period marked the end of the Eolithic Stage of my Development.

The Implements I was making by then were a great advance over what I made before. I devised Scrapers, Throwing Stones, Borers, Knives, Darts, and improved Axes that were held in the hand. Old Father Time chipped off another Thousand Generations from his everlasting mountain.

Then the Fourth and last Glacial Age started to creep over the Land. *Eanthropus* and my works went the way of *Pithecanthropus erectus* and the Heidelberg Man. A much more intelligent Sub-Man replaced them. He is known as the Neanderthal Man. With him a higher Stage dawned in my Development.

Early Paleolithic Technology

Three times I had gotten a Start with Man and three times the Ice had driven us south. This time we stuck it out. *Homo Neanderthalensis* had potentialities. He was a squat, hairy, ugly Fellow, a mighty hunter and far smarter than any of the Sub-Men who went before. He achieved the one thing that might have saved Them. *He Discovered Fire.*

I dont remember clearly how it was contrived. It may have been that he came across a Burning Forest, struck by lightning, and stumbled on it that way. It may have been that he approached an Erupting Volcano, saw a fiery stream of Lava and poked at it with his Club. The Club would have caught afire. It may have been that he was chipping Stones too close to a pile of dry leaves. Sparks could have ignited the leaves. After the original discovery, I taught him to produce Fire at will by striking Iron Pyrites against Flint in the presence of dry leaves.

The important thing was that he had Fire. This set him apart from the Lower Life around him. It came just in time. The Fourth Glacial Age was well on its way. That was 60,000 years ago. As the weather became more severe, Neanderthaloid retreated to the Caves. Driven by instinct, the wild beasts did the same. There were cave lions, hyenas and the great cave bear. Man had to Fight for possession of a Place to lay his head. With Fire and the Cutting Edge of Stone he was

irresistible. Yes, I did help him then, with a Superior Technology to what had obtained before.

During this period of Cave Life, I began to expand my Operations. I taught Man how to use the Skins of animals so as to keep his own body warm. I taught him how to make Awls, cut Thongs and pierce holes so he could drape the Skins around him. I taught him how to dress Skins. I taught him to make Spears with which to kill reindeer, bear and mammoth. I taught him to cook his meat over the Fire. I taught him how to dry it in the Sun and save it for future use.

My Tools and Weapons of that period included several varieties of Scrapers, Borers, Hand Axes, Choppers, Awls, Planing Tools, Darts, Knives, Spearheads and the Hammer and Bone Anvil. With Neanderthaloid, the first Family Life began and the first division of Function in the Production of Goods and Services. Fire made all this possible and inevitable. It did even more. It assisted the Mental Development of Man. When he began to cook his food, this practice led to a shrinkage of the Bony Structure and Muscles previously developed to masticate raw meat, etc. This created more Room on the inside of his Skull and facilitated the Frontal Development of his Brain.

Late Paleolithic Technology

Homo Neanderthalensis prevailed for Tens of Thousands of Years. Although he was better than the Sub-Men before him, he was not quite good enough to survive. As the last Ice Age waned and the Land became Fruitful again, a new and higher type of Man appeared. He came out of the South where he had been slowly Evolving and Improving. He is known as the Cro-Magnon Man. That was about 30,000 years ago.

Cro-Magnard is said to be the first *True Man*.

I was with Him also as he grew and developed parallel with the Neanderthal Man. I, Technology, am everywhere. Wherever Men are, I exist and Expand to a greater or lesser degree. The extent of my Operations and Development depends upon the Natural Resources available, the pressure of the Physical Environment and the Receptivity among Men toward my Pressure. I exist both as an Idea and a Physical Force. I am a Real Concept in the minds of Men. The way I operate is like this.

First, a Physical Need must exist, that is, a Function must require fulfilling. Such Needs and Functions arise out of the Interacting Forces present in Man's relationship with his Physical Environment. The Need and Function having preceded the Thought, I then go into action as an Idea to Fulfill the Function. I invent Tools and devise Processes. In turn these Tools and Processes react upon both Man and his Physical Environment, bringing Adaptations in both.

Being a Functional Idea, I, Technology, could not devise a Tool or Process beyond Man's Mental Ability to understand or his Physical Strength to use. It wouldn't Work because he couldn't work it. It would be no good to him. It wouldn't Fulfill the required Function.

This proves that I, Technology, am not a thing apart from Man, an Abstract or Occult Concept above his Physical Horizon. Instead I am an integral Part of him and his Environment. I am a Real and constantly changing Idea and Physical Force. I am the First Effect and also the End Product of Man's Physical Needs. And Man, physically, mentally and culturally is the End Product of my Tools.

So it was that I reached a Higher Stage of Development with the Cro-Magnon Race than I had with Neanderthal Man. We came North and drove our own kind out of the land. Cro-Magnard exterminated Neanderthaloid, Man, Woman and Child. He did not intermingle with him. I, Technology, drove out the crude Tools of the Early Paleolithic and replaced them with the Finer Implements of the Late Paleolithic.

For hundreds of centuries, I, Technology, and Cro-Magnard had been acquiring Skill of Hand and Power of Brain. We had developed Tools and Weapons that Neanderthaloid did not have, such as, Chisels, Gravers, Etching Tools, Drills, Bone Blades, Javelin Points, Spear Points, Daggers, Eyed Needles, Smoothers, Wedges, Fish Hooks, Harpoons, Pins and Shuttles. The early Family Life of Neanderthal had been carried forward to Tribal Life and Organization.

We together brought Art into the world for the first time. Deep in the gloom of fireless Caves, safe from prowling beasts, I whiled away countless hours Painting on the walls. I devised Soapstone Lamps in which Fat was burned for illumination. I had Pigments of black, brown, red, yellow and white. I Painted the bison, horse, ibex, cave bear and mammoth. My paintings were organic, objective, functional and integral with the Life and Time of Cro-Magnard. They still retain their Colors to this day. I also Carved the heads of women in ivory and soapstone in the form of Statuettes. Yes, with Cro-Magnard, I, Technology, made a great Step forward but a greater Development was just ahead.

Neolithic Technology

About 12,000 years ago the first Neolithic Men appeared from somewhere in the Southeast. I had been

with them also for Generations too long to count. With Neolithic Man I, Technology, developed Human Culture to its highest point up to then. With him I achieved *Polished Stone Implements*. I had an Excellent Stone Axe which was Perforated so as to be attached to a Handle.

I had learned the Function of Seeds and the use of Plants. I had Domesticated dogs, cattle, sheep, goats and pigs. I had learned to Weave Baskets to carry things. I made Pottery to cook in and to use for storage jars. I Cultivated wheat, barley and millet. I Ground coarse Flour and Baked Bread. I Wove cloth out of flax and wool. I made Sharp Needles of bone with which to sew. I also made nets to catch birds and fish.

We had no trouble conquering the Cro-Magnon Man who occupied the Land, for I, Technology, had developed the Bow and Arrow. It could kill at a distance. As Cro-Magnard had driven out Neanderthaloid, Neolithic Man now conquered Cro-Magnard. A Superior Technology will always prevail. However, it was not a war of Extermination. The two races intermingled. Many traces of Cro-Magnon Man can be found today among Modern Man.

Neolithic Man had deserted the caves. He lived in rude Huts and in Dwellings built on timber piles over the surface of lakes. He was the world's first Herder and Agriculturist. I, Technology, improved my Stone Tools and Weapons almost to the ultimate. Many of my Polished Stone Implements *look* like Modern Tools. Toward the end of the Neolithic period I learned how to use Metal. Gold was the first Metal I worked. Man used it, along with Jet and Amber, as an ornament. That's about all it ever was good for. I could never do much with the Stuff.

Bronze, however, had useful Qualities. At first I cast it in Moulds made to the shape of my best Stone Implements. That was about 7,000 years ago. Later I improved my earlier Designs. Neolithic Man and I stayed at the Bronze Stage of Development for 4,000 years. It was not until 3,000 years ago that I succeeded in Developing the use of Iron. That was well within the Historical Period of Man. Interferences to my Expansion had begun to appear.

With Late Neolithic Man I, Technology, had developed the first Writing. Then began the period of Recorded History. This recording has been largely the Chronicle of kings, priests, warriors, philosophers and politicians. These Chroniclers have not been kind to Me, Technology. They have emphasized Superficial Ideas and Events. They have Glorified the Top Dogs in Human Society. They have Twisted and Perverted the true Role of Technology in Social Life. All down through Written History, these Chroniclers have Practiced Obscurantism in favor of the Status Quo. The Real Record, however, is there. It lies buried far down in Geologic Strata, deep in the caves and scattered in the rubbish of Kitchen Middens all over the Western World.

I, Technology, was with Man when he was still sub-human, a hairy Savage eking out a precarious and perilous Existence. I accompanied him down through the Thousands of Centuries that elapsed before he developed into the Thing he is today. I was the Physical Force underlying his Existence, determining his General Welfare. I was the Means Whereby he Lived. I was with him when he Combined his Strength with that of other Men in Social Groups so as to Multiply it against the Opposing Forces of his Environment and thus gain Greater

Security for himself. In fact, I put him up to it. Social Life is a Technological Idea.

The Medicine Man Takes Over

With Social Life, so I thought, Man's Development and my Expansion would proceed at a faster Rate. I thought to build upon the Curiosity, Experience and Memory of Men. I reasoned it out this way. Every new Discovery, Invention or adaptation come upon by early Man had necessitated a rearrangement of his relationship toward his Physical Environment. The behaviour of Man before and after the Discovery of Fire is an Illustration in point. There was a Constant Progression of Social Change.

I thought that if Man's Insularity were ended and he took up Social Life, this Process would accelerate Technological Development. I thought that with a Number of Men reacting upon their Environment as a Group there would be more New Discoveries, etc. Consequently, old Inhibitions and Prohibitions would have to be Re-adjusted more frequently. This would tend to Eliminate one of my toughest opponents, Human Inertia, and give me a fluid, elastic Medium in which to Operate. It seems that I figured with too much emphasis on the Social Intelligence of Man and not enough upon his Cunning. For, *then came the Price System.*

Prior to the beginning of this System of Trade and Commerce, my record shows a steady development. My Tools progressed from the Simple to the Diversified, from the Crude to the Skillfully Wrought. The degree of my Application always kept pace with the Stage of my Development. There were no Buried Patents in the pre-Social History of Man. Instead, there was a long, slow but Steady Period of Expansion. Shortly after Social Life be-

gan, the proclivity of Man to adopt New Ideas slowed down.

For the next 5,000 years there was Little Social Change. Up to two thousand years ago, all over the world, Whole Peoples lived much the same as Neolithic Man had lived 10,000 years before. Indeed, as one Chronicler has written, this was the case with the great majority of Men in out-of-the-way places as late as the 19th Century A.D. Whence came this levelling off in the Rate of my Growth? It took me a long time to figure out, but I'm sure I have the correct answer now.

As I have told you, my Operations began at an early date in the life of Man. My original Sires were Nature and Physical Need. They begot Trial & Error, who was my Mother, and Empirical Knowledge, my Father. Unfortunately, I was not the only child of my parents. They spawned a large Brood. Among these were Superstition, Tradition, Greed, Shrewdness and Venality. These latter grew into Strong, Cunning Operators in a short time. They did not take to the same things I did. I was interested from the first in Conquest of the Physical World about me. They went off on all sorts of Odd Tangents, exploring that Egocentric, Inner World of the intangible. I was driven by an insatiable Desire to know the How and Wherefore of Physical Phenomena. They dived after Abstract Concepts. I was interested in Social Change. They were satisfied with the Status Quo.

They were always Discussing Abstract Concepts. The only question they would entertain about Physical Phenomena was how to manipulate them so as to maintain the Status Quo. This attitude of Superstition, Tradition, Greed, Shrewdness and Venality was then, and is now, the source of my Greatest Difficulty.

However, I kept on Pestering them with New Ideas. After a while, Superstition and Tradition got sore about it and tried to throw me to the wolves.

Greed, Shrewdness and Venality cautioned Hesitation. They said:

After all, we've made good out of some of the New Ideas Technology has brought in. We are Stronger than he is and can Accept or Reject his proposals as we see fit. He may bring in something Good anytime. Instead of kicking him out, let's Fix It so that Technology is under our control. We may need him some day. You never can tell.

So they fixed it, and that fixed me for a Long Time. However, the scheme they worked out will be their own undoing. It has some Fatal Contradictions in it.

All Shoddy and World Wide

After much weaving of Abstract Concepts, Superstition, Tradition, Greed, Shrewdness and Venality concocted the Price System of Social Life. This is a System organized and circumscribed to the single Function of Producing and Exchangnig Goods and Services for a Fat Profit. At first reading, this sounds harmless enough. I can assure you, however, that it has made a mess of Man's Social Life ever since it began.

The Idea to Exchange Goods and Services for Profit runs counter to my Historic Role. This, of course, is to Produce and DISTRIBUTE goods and Services as a Function of Man's relationship to his Physical Environment. I had Progressed Steadily at this for ages. The larcenous Concept of Exchange for Profit crept in about the time that Family Life developed into the more complex and diversified Tribal Organization. It is a low-born

'Johnny-Come-Lately' in the long life of Man.

It was not derived from the Physical World of Things and Events and Functions associated therewith, as my Idea of Social Life had been. It spawned from that Egocentric, Inner Domain dominated by Superstition, Tradition, Greed, Shrewdness and Venality. This Price System of Exchange for Profit has thrown obstacles in the path of my historic Function ever since it began.

Its network of Mercenary Rules and Rewards sets Man against Man, individually and collectively. In doing this, it subverts the original Purpose of Social Life. This, if you recall, was to obtain Greater Security for the individual by organizing him into Groups. This would Multiply his Strength Geometrically against the Opposing Forces of his environment. Social Life was a Technological Idea, a Tool or Device, if you please.

The idea of Exchange for Profit cancels the Technological advantages out of Social Life and reverts it back to something Lower than the Code of the Jungle. At least, that is not meretricious. The inherently Anti-Social nature of the Price System is an integral Part of its Framework and Operating Rules.

There is a basic conflict between the Technological Function of Social Life and the Price System's prostitution of that Function. However, Individuals are not to be blamed, it is the System which is at fault.

99.44 Percent Sham

They founded their Price System on Natural Scarcity, a Physical Factor, and Value, an Abstract Concept. On top of this they built a towering superstructure of Trade, Commerce, Business, Politics and Ecclesiasticism. This was then covered over with a shroud of Camouflaging Foliage com-

posed of a Choice Collection of Empty and Sugar-Coated Concepts. Any good textbook on politics, economics, morals or philosophy will give you the whole list.

They are the Treasured Darlings of the Status Quo. Seventy generations of men have been born, raised, and have died to the tune of their Dulcet Sophistries. But I, Technology, know that 10,000 generations went before who knew Naught of these Empty Concepts. I know that down underneath the Mountains of Sophistry old racial memories run deep. A Correct Idea never dies.

In the setup of the Price System I, Technology, was assigned a Minor Role. This consisted of regulating the Handicraft-Agrarian Methods of Production. My only Implements were Human Toil and Hand Tools. Thus my Development was Frozen approximately at the Level I had reached in the Late Neolithic Period. In substance, I became a Prisoner within the Framework of the Price System, at the beck and call of the Blessed Minority on top of the Social Dung Heap. Nevertheless, I, Technology, was the Physical Factor underlying the whole Structure. Without Technology, no matter how crude, Civilization would Relapse into savagery.

The only Real Concept in the whole Price System structure was Natural Scarcity. It was a Physical Factor always present in Man's environment. Without Natural Scarcity the Price System could not have endured. It Validates the Big Abstract Concept called Value and lends Credence to all the smaller ones. Natural Scarcity and I, Technology, are old enemies. We have Fought on a thousand battlefields. He always won because in my earlier days my Stage of Development was too Low. Then, ever since the Price System be-

gan, I've been limited to the use of Human Toil and Hand Tools and Handicraft - Agrarian Methods, in fighting him. This has been so all over the world except on one Continent. We'll come to that part of my story later.

Another Factor which had always Handicapped me in my struggles against Natural Scarcity was the fact that I, Technology, had never had Command of Enough Energy. The Forces of Energy are the Shock Troops of Technology. Although I had shown considerable Ingeniousness in the past in Improving Tools and Weapons, I had always been Held Down by this shortage of Energy. By Energy I mean Power, the power to do work such as is derived from Human Muscles, Work Animals, Water Wheels and Windmills. The output I was able to Produce of anything was always Geared Down to the amount of Power available from these sources.

Any high school book on physics will reveal that this amount is Negligible. The best I was able to do in the past was to Improve Skills and Implements. The only Tool with which I could ever hope to Defeat Natural Scarcity was Greater Production. This requires more Power, i.e., Energy, as well as better Skills and Implements. I was never able to Achieve this to any great extent except on One Continent. I'm ahead of my story again. We'll have to get to that later.

They Say The Sun Stood Still

All during the past, the only source material and references I could go to for Inspiration were my parents Trial & Error and Empirical Knowledge. Although they have piled up a tremendous output of Fable and Supposition in their long career, these two have not put out much Reliable Accurate Information. They were never of much help to Me. That had some-

thing to do with the Slowness of my Development in the past. A much better source of Inspiration was needed if my methods were ever to graduate from the Hit and Miss class. After a while, it came.

For the first 6,000 years of the Price System, Physical Conditions remained Static. These underlying Factors were Human Toil and Hand Tools and Handicraft-Agrarian Methods in combination with Ever Present Natural Scarcity. I, Technology, was Confined to a Limited Scope of Operations. Consequently, the Superstructure of the Price System, composed of Business, Politics, Ecclesiasticism, etc. was static also. There was no Social Change.

Superstition, Tradition, Greed, Shrewdness and Venality fought for and switched control of the Social Dung Heap among themselves for ages. There were many Wars. In fact, one eminent Society of International Law has estimated that in the last 4,000 years the Price System has produced 8,000 Peace Treaties but only 268 years of Peace. All these Wars added not one jot or tittle to the General Welfare of Man. They served excellently, however, as a Medium to enable one or the other Controlling Force to Climb to Eminence over Men's Graves. The Level of Civilization remained low. This, of course, was because I, Technology, was Restricted. It is a truism that the Level of Civilization is everywhere Dependent upon the Stage of My Development plus the Degree of my Application.

About 1,500 years ago a particularly Low and Barren Period of the Price System began. It lasted about 1,000 years. Superstition, Tradition, Greed, Shrewdness and Venality enjoyed their Greatest Reign then. More of the lowest and vilest Elements in

Society climbed to the top of the Social Dung Heap than ever before or since. It was the Golden Age of the Price System. These Elements concocted a new social dictum called Authoritarianism. This means Blind Obedience to Arbitrary Governance by Dogma. They crammed this down the throats of Men with Fire and Sword, Rack and Dungeon. I, Technology, was forced to flee from the Western World. Fortunately, I found a Favorable Territory in which to Expand in the East. Even Empirical Knowledge and Trial & Error were pushed into the Background. Then two things happened.

A First Time For Everything

A series of Physical Events occurred that caused a Revulsion against Authoritarianism to sweep over the Western World. Then a young and virile Stranger came riding out of the East. I would like to tell you about him first.

The Stranger's name was Scientific Method. He cast eyes upon Trial & Error and went for her, hook, line and sinker. Without ceremony or sanctification Scientific Method kicked Empirical Knowledge out of the picture and took Trial & Error to his Bed and Board. There was never a more fortunate Affair in the long history of Man.

It was a prolific Union too. Out of it sprang first, Observation, Research and Experiment, three beautiful Daughters. Then came that brace of stalwart Sons, Analysis and Synthesis. They always go together. If you hire One, you must also hire the Other, or else you get only half a job done. These five children grew up together. They were endowed with Intelligence and Integrity to an outstanding degree. I, Technology, took to them from the start. Since then we have been inseparable.

After an interval, another little Stranger came to the House of Man. It was the last and greatest of the offspring of Trial & Error and Scientific Method. Its name was Scientific Knowledge. It has New Characteristics never possessed by Empirical Knowledge. It is Exact, Organized and Verifiable. It is easy to check into its Source Material and References to find Inspiration.

Empirical Knowledge, on the other hand, had for thousands of years, enshrouded its findings in Folklore, Fable and Opinions. In case you don't know, an Opinion is a mixture of Supposition, Conjecture and Imagination. In other words, just a Guess. After the Price System got going good, Empirical Knowledge became worse. It mixed Physical Phenomena and Abstract Concepts into totally New Messes called Philosophy and Ideologies. It got so bad that I, Technology, had to hunt like blazes among all this Rubbish to find one Single Little Fact. So you can imagine how gladly I welcomed the coming of Scientific Knowledge.

One of the first Prodigies he performed was to segregate Facts and Opinions into separate fields. This job had become necessary. Opinions had always tried to masquerade as Facts. This Organized Confusion hindered my Expansion. I had to be able to tell the difference between the two. I, Technology, cannot Operate with Opinions. I need Facts. This segregation was accomplished by the Daughters of Scientific Method, namely, Observation, Research and Experiment. They attacked Facts and Opinions with glee and a new Weapon which I had fashioned for the job. It is a Testing Formula called Definition of a Fact. It operates as follows:

A fact is the close agreement

of a series of Observations of the same Phenomenon.

All Concepts that cannot meet its Rigid Specifications are classed as Opinions. Since all Opinions are outside the field of Facts, they are equally invalid for my Purpose and Function. However, it's a Free Country and Science does not want to make it Less Free. Every man, therefore, has the inalienable Right to make as big an ass out of himself as he likes in his Private Life by blurting out his Opinions. Since all Opinions are Equally Invalid, his neighbor has the same Right. In fact, the right to wallow in the anarchy of Opinion appears to be a 'Natural Born Right' of Man.

However, he has another 'Natural Born Right.' That is the right to be protected from the anarchy of Opinion. When this anarchy overflows and produces Social Effects, the line must be drawn. Any Man who Parades forth his Private Opinions into the field of Public Social Problems is a Menace to the General Welfare.

Prologue to Social Change

The great rise of Scientific Knowledge came about this way. During the Golden Age of the Price System while the Western World was stewing in the Fetid Cellars of Authoritarianism I, Technology, was Expanding in the East. When Physical Conditions became right, I moved West. Whenever, in the past, any Human Culture had become Static and Decadent, I had moved in with New Technology and New Men to Take it Over. I did this with Neanderthal Man, with Cro-Magnon man and with lesser known races. My Tendency is to Expand. If I cannot do it in one Land or culture, I will do it in Another. Any Economy that adopts Technology must there-

after Expand in the Social Field to a plane compatible with its Demands, or die out.

Into the Sodden Atmosphere of Authoritarianism came my Products from the East. The Arabs, Jews, Hindus, Nestorians and Chinese contributed. Some of these Cultures had received their Impetus from Ancient Greece. There, Scientific Knowledge had gotten off to a Respectable Start 2,000 years ago. It had been Squelched by the rise of Authoritarianism. The Men of the East had received Greek science as a Heritage. They kept it Alive and Improved upon it to some extent. During and after the Dark Age, Scientific Knowledge came west.

By then I, Technology, had achieved the Manufacture of Paper and Printing. I had developed the Magnetic Compass, for offshore navigation. I had Gunpowder. With the Arabs I had worked out Decimals, the Concept of Zero, Algebra, Spherical Trigonometry, Chemistry, Physiology, Medicine and Astronomy. I worked with Metals such as Gold, Silver, Copper, Bronze, Iron and Steel. My Textiles were of the Finest quality. I excelled in Horticulture and Agriculture. I had Tinctures, Essences and Syrups and I made Sugar from the cane. All this I brought West with me, but the Most Precious Thing I brought was Scientific Method. It led to the Renaissance of Western Culture.

Among the Physical Factors which brought about my Return to the Western World were the following: During the 9th, 10th and 11th Centuries a Series of Invasions by the Normans into the South created Population Pressures and Unsettled Conditions. The causes for these Invasions were rooted in the Poverty and Hard

Living Conditions of the North, i.e., too much Natural Scarcity.

Between the 11th and 13th Centuries a series of Holy Wars was carried on between the East and West. They are called the Crusades. They were brought about by the Social Dislocations caused by the Norman invasions; by Mercantile Rivalry between the East and West; and by the Split between the Eastern and Western Branches of Authoritarianism.

In the 13th Century, the Mongol Invasions threw the Doors between East and West wide open. Following the Mongol Invasions came the Black Death. It swept over the Western World and killed over a quarter of the Population. In the 14th and 15th Centuries the *Travels of Marco Polo* were widely read. It created a Profound Impression.

Off To A Good Start

All these events stirred up a Ferment. Out of it flowered the Greatest Advance of Science yet known. It was the Renaissance of Technology. Following it came the Renaissance, a revival of Art, Literature and Learning, which had long been suppressed by Authoritarianism. Scientific Method, along with Observation, Research and Experiment bent themselves to a Study of the Physical Laws by which I, Technology, must operate. Scientific Knowledge became Greater. After a few hundred years of this, it culminated in the Industrial Revolution.

With the opening of the Industrial Revolution I, Technology, at last came into possession of a Superior Set of Tools with which to Operate. I now had the Scientific Method, and a growing body of Exact, Organized and Verifiable Knowledge. With these splendid Tools it did not take me long to design the Major Tool I had always lacked. That was Ex-

traneous Energy. With this Tool I will remake the world.

Earlier, in the East, I had tried to design Extraneous Energy. I had some success with the Expanding Force of Gas in the form of Gunpowder; but I had not been able to convert it into Power. Then, too, Superstition took it away from me and used it to make Firecrackers. He claimed that the loud, popping Noises produced would scare away the Devils. Later I used this form of Energy in warfare.

In Ancient Rome I had stumbled on the Idea of getting Power from the Expanding Force of Steam. That was an age of Human Toil and I was unable to apply it within that Framework. So Superstition took that Discovery away from me also. He used it to cause Idols to turn on their Pedestals and to revolve their eyes, and for the opening of Temple Doors. It went over big with his Followers as a source of Awe. My time was to come later.

The Factors which finally brought about the introduction of Extraneous Energy were two, both Physical. One was the great Range and Complexity of my Improvements in Handicraft Methods. The other was the Rise of a great, new Physical Need. In the 12th Century I had learned to use the Power of the Wind. I built Windmills for grinding grain. The first one went up in 1191 A.D. It was destroyed by the Abbott of the Monastery nearby. He said it was a Menace to Civilization. Can you imagine that? It has ever been thus with Authoritarianism.

I had built Water Wheels to use the Power of Running Water, much earlier. By then I had learned to use the Power of Work Animals almost to the maximum of their capacity on Grinders, Pumps, Hoists, Transport Vehicles, etc.

Before I developed Extraneous Energy I had devised the Factory System of Production. This sprang out of my much earlier Idea of the Division of Function. However, its Expansion had been limited. Although I had Textile Factories powered by Water Wheels, their Ability to Produce was small. By then I had also gone in for the extensive Use of Iron. I had devised Mechanisms like the Crossbow, the Cannon, the Printing Press, the Loom, and others. This led to a greater use of Iron. I developed Forges and Blast Furnaces powered by Water Wheels.

This growing Range and Complexity of my Improvement of Handicraft Methods led to a much greater use of Fuel. At first I burned Wood. As the Forests dwindled away I turned to Coal. As the Coal Mines went deeper into the Earth, the problem of pumping out the Water which seeped in became too great for my Simple Devices. So I turned to the Power in Expanding Steam. Once again in the history of Man arrived a period when a great Physical Need arose. A Function needed fulfilling. So I, Technology, went to work as an Idea and invented the *Steam Engine*.

Try and Stop Me Now

At last I had Extraneous Energy at my Command. My Ability to Produce jumped immediately. Scientific Knowledge was by now turning out a Volume of Exact, Organized and Verifiable information. I delved into this for Inspiration. My Rate of Development speeded up. Soon the Western World was Powered by Steam. The Machine Age had dawned. The Industrial Revolution was on.

I soon learned how to use the Expanding Power of Gas in another Form. That was the Internal Combustion Engine. The idea came from my earlier Experiments with Gun-

powder. So I now had two Prime Sources of Power never before available. I had learned how to use the Molecular Energy in fossil fuels. Natural Scarcity began to take it on the chin for the first time, as Greater Production entered the picture.

Then Superstition, Tradition, Greed, Shrewdness and Venality went to bat once again to Maintain Natural Scarcity. They wove some more Abstract Concepts together and concocted a new Interference to my Development. It is called The Patent System. Ostensibly, it is supposed to be a set of Rules to Reward Incentive, Stimulate Initiative and protect the right of inventors to Extract Profits from their inventions. The Patent System is something else also, much more antisocial. The Rules are so drawn as to protect the Intrinsic Property Rights of Inventors in their Devices. Thus, they can do with them whatever they please. They are not compelled to Apply my New Developments, but they may withhold them from use altogether. Or, they may Sell these Property Rights to some one else, who may then Bury the Invention for all that anybody cares. The Patent System has grown into a Gigantic Graveyard for some of my Best Ideas. It has been said, however, "That which goeth down to the grave shall rise again."

In spite of this I, Technology, have gone ahead inventing New and Better Mechanisms, devising More Efficient Processes and tapping New Sources of Extraneous Energy. About a hundred years after the advent of the Steam Engine. I conquered the Electric Current and put it to work. This is my greatest Achievement up to date. Before this it had been necessary to couple my Mechanisms directly to my Prime Sources of Power by means of Belts, Pulleys, Shafts, Gears, etc.

I found that the Electric Current could be transmitted over a wire from its Generator and applied to any Mechanism by means of a Motor. This freed the Machine from its previous Limitations and ushered in the Power Age. I now have excessive quantities of Extraneous Energy available from such sources as Coal, Oil, Gas, Wind and Falling Water. In addition to these sources of Molecular Energy mentioned, I, Technology, have just lately managed to release the Energy of the Atom.

Scientific Knowledge seems to think that there is a limitless source of Extraneous Energy available in the fission of the Atom. The only thing I have achieved with Atoms as yet is to Explode them in the form of Bombs. This Development came out of the high pressure Physical Needs of warfare. I have not yet mastered the Control of Atomic Energy as Power. Even if it can be achieved, the question is what is the use? On the North American Continent Man and I, Technology, already have more Extraneous Energy available than Superstition, Tradition, Greed, Shrewdness, and Venality will permit us to apply.

New World Symphony

In North America I have developed further into the Power Age than anywhere else on Earth. The average Man on the street, however, does not benefit much from it. As late as 1943 A.D., the Records show that 75 percent of the population received less Purchasing Power than is considered sufficient to Buy a decent Standard of Living, i.e., less than \$3,000 a year. That's the Price System for you! Strange as it seems, if the entire Population ever got an adequate Standard of Living under the Price System, the System would collapse at once upon achieving it.

Through the application of Phy-

sical Laws and Extraneous Energy I, Technology, have achieved that Greater Production sought all throughout the ages. Yet scarcity still persists. To be sure it is no longer Natural Scarcity. I killed him off in North America a generation ago. However, through the machinations of Superstition, Tradition, Greed, Shrewdness and Venality he was metamorphosed into Artificially Maintained Scarcity. The net end result in low Living Standards is the same.

Thus, Man is being robbed of the Fruits of Technology, because of the Operating Rules of the Price System. It must maintain Scarcity at all costs, for that is the only Real Physical Factor in its entire Sorry Makeup. They know well that if deprived of Scarcity, their structure will collapse. The General Welfare of the other 98 percent of the Human Components involved is of no importance to the 2 percent who control. Their God is the God of The Market Place.

Their System of Social Life is circumscribed to the business of Producing and Exchanging for a Fat Profit. The Fatter, the better. Therefore I, Technology, am allowed only to Operate as much as is necessary to make Profit out of my Operations. This anti-social Rule of the Price System has held me back. There is, however, a Fatal Contradiction in it for the Price System, for whenever any Economy attains a sizeable application of Technology and Energy, it must constantly Increase that Application. It comes about this way.

Cash Register Blues

The Primary Rules of the Price System are: Buy Low, Sell High, Keep Things Scarce. Its Operating Philosophy is 'Laissez Faire.' This means 'Let Me Alone So I Can Obey The Three Primary Rules.' There are only two sets of Physical Condi-

tions under which it is possible for these Rules to Operate successfully for any Length of Time. The first is under a static Handicraft-Agrarian setup of Human Toil and Hand Tools. The other is when the Price System is in a State of Continuous Expansion. Neither set of Physical Conditions can exist for long after I, Technology, enter the picture.

The three Primary Rules make it compulsory for an Entrepreneur to Operate at a Profit. To do this he must chisel out a Preferential Position for himself in the Market Place. He must Undersell, Outsell, or Out-manipulate his Competitors. They face the same Compulsion. Everyone involved must attempt to Hog as big a share of the Market as possible. The Physical Conditions created by these Compulsions are right up my alley. Underselling, Outselling and Manipulation tend to force the Introduction of more Technology and Energy.

Thus, a curious Thing happens. Business in its attempt to obey its own Three Primary Rules is driven into a direct violation of them. Buy Low, Sell High and Keep Things Scarce are incompatible with Increased Application of Technology and Energy.

In order to Escape the consequences involved, Business is driven to combine into ever larger Units so as to Control the Market. This practice is also a violation of the Primary Rules. The Combining of Businesses into Corporate Trusts and Cartels tends to the introduction of Newer Technology and More Efficient Use of Energy by New Entrepreneurs. Thus, my Impact upon the Ancient Price System Structure continues to mount in effectiveness.

Through Greater Efficiency I, Technology, constantly Reduce the Man-Hours of Labor required for

any one Unit of Production. Business just loves this because it Reduces Unit Labor Costs and Increases Fat Profits by cutting down the Total Man-Hours of Labor necessary. Because of its nature, Business is unable to prevent this process from reducing Total Mass Purchasing Power.

This, of course, is the ability of the Human Components involved to Buy Back the Products of Industry. If Purchasing Ability is not equal to Production Ability, the Market dwindles and Depression sets in. This stimulates the Introduction of more Technology and Energy again. Overall Costs must be reduced in order to Operate at a Profit in a Dwindling Market. The very process of Reducing Overall Costs also reduces Total Mass Purchasing Power still further by driving Total Man-Hours of Labor lower. It seems that Business is now in the Business of putting itself out of Business. Hurray!

No Tickey, No Washee!

Involved with the Lowering of Overall Costs and a Dwindling Market are the necessity to manufacture Cheaper Products and create Artificial Demands. The latter is done by Advertising and other Economic Hocus Pocus. Perhaps, if the Price System could Advertise itself into a System of Trade and Commerce wherein everybody Lived by taking in each other's Washing, its problems would be solved. There would have to be Rigid Standards of Dirtiness. Business couldn't afford to have its Apple Cart upset by Radicals who insisted on keeping too Clean. It would only lead to the Introduction of Technology. In fact, There Ought to be a Law so that it would be unconstitutional to be caught with a Clean Shirt except on Sunday. Three jeers for Good Old Business!

Getting back to our Story, the only way to raise Total Purchasing Ability in proportion to the Decline of Total Man-Hours of Labor is to boost Wage Rates. This increases Unit Costs again and promotes the introduction of More Technology. The efforts of Business to balance Exchange and Profit against Energy and Technology reminds me of a blind man in a dark room chasing a black cat that isn't there.

There are other Fatal Contradictions involved in the Idea of Exchange for Profit, such as: Limitation of Natural Resources, Expansion of Debt, Decline of the Interest Rate, etc. They are too involved to explain here. However, you may rest assured that it is a Physical Impossibility for the Price System to balance Production and Purchasing Power. The nature of its own Operating Rules makes it impossible.

Indeed, it was never interested in that. Such a Functional Idea is foreign to its Purpose. Yet if it does not accomplish it soon, it will destroy itself. That is the Dilemma of the Power Age, which I, Technology, have brought about on the North American Continent.

So far the Price System has evaded this Dilemma by resorting to a series of Stop-Gap Alternatives. Among these are: Government Charity to Business in the form of Fat Contracts, Cost-Plus, Subsidies, Carry-Backs, Government Distribution of Purchasing Power to the Human Components involved so they can Buy the Products of Government-Supported Business, Foreign Wars, Foreign Loans, Installment Buying, Waste and Shoddy Goods. But, it's no use. These alternatives lead only to Higher Taxes, Lower Interest Rates, Greater Debt Loads, Depreciated Credit, Inflation, Deflation and

still Lower Total Mass Purchasing Power. It's like a Habit-Forming Drug, the use of which makes it constantly necessary to increase the dosage to get the Desired Effect.

I, Technology, am reducing the Alternatives faster than they can be adopted. Soon there will be only one alternative. It will be a choice between Science or Chaos. All down through History, I have eliminated Inferior Technologies and Men in favor of Better. It is the Law of my Growth. The Degree of my Application must keep pace with the Stage of my Development. This applies to both the Social and Industrial Field. There is no Recourse anywhere. These laws are inexorable. That is how I MUST Operate.

Oldest Trick In The Book

Since I obtained command of Extraneous Energy I have adopted a new Strategy toward my ancient enemies, Superstition, Tradition, Greed, Shrewdness and Venality. With Scientific Knowledge, I was able to split them against each other. Scientific Knowledge had an irresistible Appeal for Greed, Shrewdness and Venality. They saw an opportunity to use him for still Fatter Profits. In this they have been Successful.

Superstition and Tradition objected. They realized the danger involved. They saw that if Greed, Shrewdness and Venality took Scientific Knowledge on, it would turn into a Frankenstein that eventually would destroy them all. It was no use. The Lure of Fatter Profits was too great. Today, Greed, Shrewdness and Venality have built great Research Laboratories all over the land for Science. In 1900 there were only a baker's dozen of such Kept Institutions in the U.S. Today, there are thousands.

Science does not know that it is playing a Double Dealing Role. Nei-

ther does Greed, Shrewdness and Venality. All four have one-track minds. Science is interested only in the Pursuit of Knowledge for the sake of Knowledge. The other three are interested only in Science as a source of Fatter Profits. They still imagine that they can manipulate Physical Phenomena and maintain the Status Quo at the same time. I, Technology, know that they cannot.

Scientific Knowledge has created marvelous New Jewels out of Pure Science. From their Ivory Towers they hand these gems down to Greed, Shrewdness and Venality. The latter turn them over to me to Convert into Fatter Profits in the Market Place. Brother, how I love to play that Role. Yes, indeed, the chiseling Triplets of the Price System have sold out their ancient alliance with Superstition and Tradition. The Deal was consummated under the blessed banner of High, Low, Close.

I have little left to fear from Greed, Shrewdness and Venality. All they need is more Rope. They are hanging themselves. My real enemies now are Superstition and Tradition. They are inflexibly rooted in that Occult World of the Metaphysical from which emanate Man's worst Fears, and in the Dead Past from which reaches his greatest inhibitions. They hate me, Technology, with an undying hatred. From out of the depths of their Dark Concepts they curse the day I was born.

For at least a half million years Superstition and Tradition have ruled the minds of Men. They are his Natural Born Enemies. They have always restrained him from a Better Existence on this Earth. He, poor fool, doesn't even seem to know it. He cuddles them to his Breast with prayerful fondness and nurses them with the Substance of his Life. All

they ever gave in return was Belief and Opinions. These are the chains that tie Host and Leech together to the Dead Past.

Superstition and Tradition are strong, cunning and devoid of Scruples. They will stop at nothing to overcome Technology. All down through History they have led the Parade in every Counter-Revolutionary movement against the General Welfare of man. They are the Concentrated Essence of the Price System. I know them of old. I know all their Dirty Tricks and Methods. I have grown much Wiser, as well as Stronger, in the last few hundred years.

Nobody Is Perfect

I think that I have it all over Superstition and Tradition in every way, except One. Like Achilles I, Technology, am invulnerable in all but one Spot. That spot is Social Violence. Under those Physical Conditions, I am easily destroyed. In this respect I am Tenuous. Social Violence is my Greatest Weakness. This is even more pronounced in the advanced stage of the Power Age to which I have developed in North America than it ever was before.

Previously my Development was Cruder and Simpler than now. During the early stages of the Industrial Revolution, I became more Complex and Diversified. Even then I was more resistant to Social Violence. My Centers of Production were of necessity close to the centers of my Sources of Primary Power. I had no Secondary Movers then. Consequently, my Structure was more Integrated and easier to defend. Now, it is a different Story.

Since I mastered the Transmission of Power over a Thin Wire, my Centers of Production can operate from Secondary Movers energized from

a distance. This has led to Decentralization of Production to a large extent. This makes me more Tenuous than ever. My Centers of Production are harder to Defend and easier to Destroy. Unless I can devise some Method to overcome this Weakness, I will have to watch my step carefully. Superstition and Tradition grow fat on Social Violence. They have instigated it on Numerous Occasions in the past.

In addition to the Weakness inherent in Decentralization, there is an equally great Weakness involved in the Modern Complexity and Diversification I have attained. My Techniques require Constant Balance and Adjustment between their various Functions. There must be complete and Vertical Control at all times. Let this be disrupted in one part, and the Power goes off, the Lights go out, and the Flow Lines Stop.

I am not revealing any Secrets when I tell this. Superstition and Tradition know it well. Rather am I calling it to the attention of Men because they will benefit from my Continuous Operation and Expansion, and will be the ones to suffer if I am Destroyed. They cannot Live without me. In view of this, I have been forced to advance a Postulate. It is to the effect that: 'Any person or Group advocating Social Violence as a Solution of Social Problems in the Power Age is guilty of Treason against the Continent of North America.'

The showdown between Superstition and Tradition and I, Technology, will come soon. It is long overdue. Social Problems are insoluble within the Framework of the Price System. It has a demonstrated Record of Futility. My Record, on the other hand, shows Accomplishment and Constant Progression in

spite of Interferences. I will not stand alone at the Armageddon of the Price System. I have Volumes of Factual Testimony and many Able Allies on my side.

Always With You

I, Technology, was with that running-walking Ground Ape of the Cenozoic Era, waging his precarious battle for existence with only his Bare Hands and the Sticks and Stones I was able to provide as Tools and Weapons.

I was with that sub-man *Pithecanthropus erectus* who faced up to the terrible sabre-toothed tiger with only a Club and a Stone Knife. Where would he have been without them?

I was with the Neanderthal Man who fought the great cave bear and defied the Last Ice Age with the Fire that I taught him to Conquer and Control.

I was with the Cro-Magnon Man who developed Tribal Life and Organization, who carried my Technology further than it had ever been before and brought Art into the world for the first time.

I was with that Early Neolithic Man who conquered the Cro-Magnon Race to the twang of the Bowstring and the long reach of the Piercing Arrow.

I was with that Late Neolithic Man who mixed Copper and Tin together into Bronze and cast it in Moulds patterned after his best Stone Implements.

I was with that unknown Artisan, at the Dawn of Civilization, who first Smelted Iron in open pits, who later built his Furnace in the side of a hill and still later Invented the Bellows to make his Fire burn better.

I was with that uncredited worker who made the first Bricks and Thin Clay Writing Tablets; and the pedagogue who advanced beyond Picture

Writing and designed the first Wedge-Shaped Syllables.

That was in the world's first-known civilization in the Sumerian City-States of the Euphrates-Tigris Valley. I was with the forgotten Agriculturist of that valley who developed the first Hydrology System of Irrigation Trenches and Canals.

I was with that uncouth Fellow of Ancient Egypt who mastered the Principle of the Lever and designed the first Shadoof to raise Water from the River to pour over his growing crops.

I was with the host of Unsung Artisans and Experimenters of those Ancient Civilizations whose Combined Efforts mastered the principles of my four basic Tools; the Lever, the Inclined Plane, the Wedge, and the Pulley or Wheel.

I was with that slovenly son of a Stone Mason called Socrates who exposed the Beliefs and Opinions of his time to the acid of Intelligence. They killed him for 'corrupting the youth of Athens.'

I was with Democritus 'the laughing philosopher' of ancient Greece, the first Man to suggest the Atomic Theory of Matter. I knew then that 'atoms combined with each other to form different bodies.' However, I did not yet know what composed the Atom.

I was with Hippocrates, the Father of Medicine, who combined Observation, Research and Experiment with Inductive Reasoning for the first time in the Art of Healing.

I was with Ptolmey, natural son of Philip of Macedon, and one of Alexander the Great's Generals, who founded the first University in the world at Alexandria, Egypt. For more than a century Scientific Knowledge blazed brightly there. Of my pupils there Eratosthenes measured the

size of the Earth and missed the correct answer by Only a few hundred miles. That was Good Going then. Hipparchus mapped and catalogued the Stars for the First Time there. Hero devised the world's first Steam Engine there. Archimedes, who excelled in Astronomy, Hydrostatics, Mechanics and Optics, studied there. He invented the Revolving Screw and devised the first Multiple use of Pulleys. Euclid who digested the mathematical principles of Thales, Pythagorus and Eudoxus into the regularity and order of Arithmetic and Geometry, was a pupil. Herophilus began Anatomy there. He showed that the seat of Intelligence was in the brain and not in the heart.

Scientific Knowledge died out in Alexandria after about a century and Pedantry and Philosophy moved in. That was in the 3rd Century B.C. The Library of the Museum was the greatest in the Ancient World. In 390 A.D. one large Section of it was destroyed by Bishop Theophilus. He said it was a seat of Pagan Learning. In 640 A.D. the Mohammedans burned out the rest of it. They said it was not a seat of Mohammedan Learning. It has ever been thus with Authoritarianism.

More Witnesses At The Bar

I was with the Civil and Military Engineers of Ancient Rome who built Sanitary Systems, Bath Houses and the first Central Heating System, the Hypocaust, and who designed Roads and Aqueducts that endure to this day.

I was with Haroun al Raschid, Caliph of Bagdad (763-809) who, after Authoritarianism began to squelch Scientific Knowledge in the Western World, invited Learned Men of all countries to come to Arabia and paid them good salaries. With his reign began the rich and many-sided

intellectual life of Arabia which preserved the Scientific Knowledge of Ancient Greece, added to it and ultimately returned it back to the West.

I was with Roger Bacon (1210-1293), that rebel monk, whose Studies were so successfully buried by Authoritarianism that they were not uncovered for 500 years. He wrote:

Cease to be ruled by dogmas and Authorities; look at the world! There are two modes of investigation, through argument and through experiment. Argument does not suffice but experience does. Experiment! Experiment!

For saying that, Roger Bacon spent 20 years in jail, without Writing Materials, Books or Instruments. I, Technology, was there with him.

I was also with the alchemists of the 13th and 14th Centuries. They didn't know it. They pursued Magic. They sought to turn base metals into Gold. They hunted the Grand Elixir that would cure all Diseases. In these pursuits they pried into the Secrets of Nature. They uncovered much Empirical Knowledge about Poisons, Dyes, Glass and Metallurgy. Later, Scientific Method translated much of this Empirical Knowledge into Scientific Knowledge.

I was with that Brilliant Galaxy of Men who pushed back the frontiers of Scientific Knowledge during the 15th and 16th Centuries. There was Leonardo da Vinci, Copernicus, Tycho Brahe, Thomas Digges, Bruno (The Inquisition of Authoritarianism burned him at the stake), William Gilbert, Francis Bacon, Vesalius, Paracelsus, and others. They brought Scientific Method to bear upon Nature and uncovered many of its Physical Laws.

My Name Is Legion

I was with that group of 17th

Century searchers for the Laws by which I must Operate. There was John Kepler, Galileo, Isaac Newton, Harvey, Descartes, Leeuwenhoek, Robert Boyle, Christian Huygens, Toricelli, von Guericke, Malpighi, etc.

During the 18th Century I, Technology, carried my pursuit of Scientific Knowledge still further. There was Coulomb, Herschel, Wilson, James Bernouilli, Laplace, Cavendish, Denis Papin, Black, Priestly, Linnaeus, Hutton, Newcomen, James Watt, Benjamin Thompson, Benjamin Franklin, and Antoine Laurent Lavoisier (1743-1794). Lavoisier took the prefix *al* out of alchemy and founded Modern Chemistry. He was guillotined by Radicals of the French Revolution. In sentencing him, the honorable Judge said: 'The Republic has no use for Men of Science.' His head rolled in the basket and his body was thrown into a nameless grave. But I, Technology, lived on in his work.

In the 19th Century a still greater galaxy of Men came into my Service. Scientific Knowledge was becoming less difficult to accumulate. That was because by now my Researchers stood upon the shoulders of a Growing Number who had gone before and done more primary work. There was von Helmholtz, Joule, Lord Kelvin, Carnot, Clausius, William Thompson, Fraunhofer, Maxwell, Willard Gibbs, Gauss, Volta, Galvani, Ohm, Berzelius, Humphrey Davy, Faraday, John Dalton, Ampere, Mendeleeff, Oersted, Arrhenius, Darwin, Pasteur, Koch, Lister, Gregory Mendel, Daimler, Mayer, Hertz, Lyell, Silliman, Audubon, Joseph Henry, Asa Gray, Torrey, Agassiz, Dana, Leidy, Marsh, Cope, Newcomb, Burbank, Osborn, and many others.

Besides this there were countless

thousands of known and Unknown Individuals through whom I advanced. The list is very long. Today, in North America, the Roster of Scientists, Engineers and Technicians, numbers millions. Many of them tower head and shoulders above the greatest names of the past. Scientific Knowledge has grown to Gargantuan Proportions. The advances of all previous history pale into the Kindergarten Class beside the great gains I, Technology, have made in the last 45 years.

'The Felon Days Malinger'

In comparison to this partial list of Great Names who bear witness to the Prodigies that I Have Wrought, how many Witnesses can Superstition and Tradition call upon. How many Prodigies have they wrought in the past that have redounded to the General Welfare of Man.

We Listen closely and Look attentively as Thousands of Centuries march by, one by one, in darkness and silence. From the Pliocene Period, many millions of years ago, to the latest tick of the clock in the 20th Century A.D., we look and listen in vain. Not a solitary Factual Witness comes to the Bar, either Quick or Dead. Superstition and Tradition have wrought only damage to the General Welfare of Man.

Today, with what I know of Physical Laws and with my Stage of Development, it is possible to set up a New and Higher Civilization in North America. I, Technology, have the Men, Machines, Materiel and Know-How. The Blueprint of Social Operations is all ready. This does not apply to the rest of the World as yet. There, for the most part, my Stage of Development has Lagged because of Poverty of Natural Resources and Abundance of Authoritarianism.

In North America I, Technology,

have already created the Framework of this Higher Civilization. It was sponsored in part by Greed, Shrewdness and Venality. They don't know it yet, but North America's great Capacity to Produce, which they encouraged me to build so that they could Extract Fatter Profits from the Market Place, is the Framework of a New Culture within the Shell of the Old. It's Too Late for them to Backtrack out of it now. There is too much Capital Investment at Stake. Once Technology is applied to any extent, a set of Circumstances is set up which forces its Continuous Expansion.

My Real Danger comes from Superstition and Tradition. They would like nothing better than to go back to a Lower Level of Culture when my Stage of Development was simpler. They would like to Freeze Human Society at that level. That is what Fascism is, i.e., a social movement backwards. That is what Authoritarianism wants. In fact, the two are but different names for the same thing. The behaviour they exhibit today is the same shown since they overthrew Ancient Civilization. They have learned nothing New and forgotten nothing Old.

Lately, Superstition and Tradition have been trying hard to make up again with Greed, Shrewdness and Venality. They are pointing out to them the Inevitable Effects of the Impact of Technology upon the Social Order. The lot of them got together recently and waged a bloody World War in an effort to turn the Clock Back. They were beaten on the Battlefield but retired safely to their Political Rostrums, Corporate Offices and Clerical Temples on Both Sides of the battlelines. There they are plotting a still greater Counter-Revolutionary Move.

The Forces of Authoritarianism are

moving into the Social Institutions of the North American Price System. They have made a great deal of progress. Their object is to take over in collaboration with Greed, Shrewdness and Venality and revert everything Backwards. They are preparing to Sell North America down the river of World Fascism under the wings of the Gentle Dove of Peace. The Greatest Sellout of All the Ages is going through the mill right now.

To go backwards is Not the Destiny of North America. That is NOT how We got where we are Today. America became Great through the Expansion of Technology. Her Greater Destiny is to move into a Higher Form of Civilization through a still Greater Expansion of Technology. If you do not believe me, just follow Roger Bacon's advice, 'Look at the world.' Look at your Physical Environment Today. I, Technology, am All Around You.

In My House Are Many Mansions

I am the gigantic Industrial System of North America, the rich Iron, Coal, Copper, Lead, Zinc and other Mines. I am the great Steel Mills which light up the night skies at Pittsburgh and Gary.

I am the railroads running night and day up and down and across this Broad Continent.

I am the Telephone System which links every Home, Office and Plant in North America with every other one and is in Operation 24 hours a day.

I am the great Hydroelectric Dams and the Central Steam Plants that generate Electricity. My Current flows smoothly and silently along the transmission Lines. Interrupt my Flow and you Die.

I am the Radio that transmits Music, News and Propaganda with the speed of Light.

I am the all-seeing eyes of Television. Greed, Shrewdness and Venality have been figuring for a long time how to convert me into Profit. So far, they have not succeeded. That is why you do not have Television yet. The rule of the Price System is that Goods and Services must be Exchanged for Profit.

I am the Sprawling Factories of Detroit, Chicago and many other places. The ingenuity of my Applications there almost knows no bounds.

I am the whirring Presses turning out mountains of Books, Magazines and Newspapers full of the Propaganda of the Price System. Their content is no concern of mine. I only work there.

I am the fleet of Barges and Boats that ply up and down North America's inland waterways, from the Panama Canal to the Arctic Ocean.

I am the gleaming Passenger Planes flying from ocean to ocean in seven hours, and the Helicopter which flies forwards, backwards, up, down and sidewise.

I am the Agricultural Machinery of North America which produces an abundance of Cereals, Fruits, Vegetables and Meat. When your Ability to Buy my Products falls too low, they are sprayed with Poison, Plowed Under, Killed or Dumped in the ocean. Artificial Scarcity must be maintained at all costs now that Natural Scarcity is dead. You wouldn't want the System of Exchange for Fat Profits to Collapse, now, would you?

I am the great Textile plants that weave on Automatic Looms. I am the Synthetic Rubber Plants turning out a Product superior to Nature's best.

I am the New Synthetic and Plastic Industry turning out Products that don't even exist in Nature.

I am the Chemical Industry rearranging the Molecule and Atom, the

better to suit the Functions that Man needs fulfilling.

I am High Frequency Induction Heating, the Super-finished Part, High Tolerance Specifications and the Deep Freeze.

I am Wood Technology, Light Metals, Ferrous and non-Ferrous Alloys, I am the Tungsten Carbide Cutting Edge. What a far cry from the Stone Knife of *Homo Neanderthalensis*. I came every Foot of that long way.

I am Electrification of Industry, Mechanization of Farming, Hydroponics and Agrotechnology. I am Automatic Mechanisms, the Photo Electric Cell and Electronic Controls, making possible Large Scale Operations in any Field of Production. My Processes will work just as well in the Field of Distribution.

I am the Spreading Network of Highways reaching into every County in the Land. I am the Automobile, the Motorcycle, the Bus and the rugged Jeep speeding along from town to town. I am the tireless Trucks poking their powerful eyes through the night from New York to Kansas City to California.

I am the beautiful Steel Towers reaching into the sky above congested Cities from coast to coast.

I am almost 2,000,000 Machine Tools and the 1,500,000,000 Installed Horse Power of Prime Moving Engines in North America.

Half Slave and Half Free

I am the Scientist in his Ivory Tower, turning out his wondrous jewels. I am the Engineer applying Mathematical Principles to Natural Forces. I am the Technician supervising the machines of Industry. I am the Army of Skilled Personnel in all Fields of Production, attending my Mechanisms, maintaining them and Functioning on their Assembly Lines.

I am the Engineer's Flow Line Chart of Production; and the Mechanics' Blueprint of Operation.

I often wish that these Men in My Service could lift their eyes from the Rut they are in long enough to Catch On To The Idea of the importance of a Blueprint for Social Operations too. They'd better, soon.

I am the entire Agricultural, Mining, Manufacturing, Transportation and Communication Flow Line Sequences of North America, from the Raw Material to the Finished Product.

I am the Technological Processes of Production in every Field of Industry. In these, 'the work is moved past the individual, and the human being employed no longer participates in any part of the process as a contributor of human effort to the actual production, but is only there as an operator to stop and start the technological process and to set up the original standards of operation. A technological process after it is thrown into operation by human instigation, controls all operations, all degrees of accuracy, and all dimensions by the rate of flow of goods and services.'

Technology today is something new under the Sun. It is the integration of Scientific Knowledge into a New Entirety of production of Physical Wealth, together with the social effects and conclusions inherent therein. The Whole forms an overall Process of Social Evolution that is unidirectional and irreversible. It never happened before and it can't happen twice in any one Area. This Social Process projects its own Polity of Control and Administration.

So far I have not been permitted to operate much in the Fields of Education, Public Health, Housing, Social Relations and Distribution in general. These are still mostly the Domain of Superstition, Tradition, Greed,

Shrewdness and Venality. That is why they are in such a Mess all the time.

I, Technology, have solved the Problem of Production. I cannot work at my Peak of Efficiency, however, until the Problem of Distribution is turned over to me also. I can solve it as well. My Past Record and my Present Stage of Development constitutes a Certified Promise to that effect.

It was I, Technology, who organized the Great Industry of North America for War. I could do it just as easily for Peace. I flooded the World with Food and Weapons. I designed a host of New Mechanisms for the fight against fascism. Among my more spectacular achievements were the Precision Bomb Sight, Radar Detection, the Proximity Fuse and the Terrible Atom Bomb. I, Technology, would just as soon turn out Peaceful Goods and Services. It is not I who dictate how I must Operate.

It's Up To You!

I am still imprisoned within the Framework of the Price System. Those who control it manipulate the Stop and Go Lights. I only work there.

If you want me to turn out Abundance, Distribution, Leisure, Equal Opportunity for ALL and Security, from Birth to Death, I can do the job. It's up to YOU.

If you would like to see the Degree of my Application brought up to a plane equal with my Stage of Development, it's up to YOU.

If you would like to see the Young Ones, our New Citizens coming into this life, open their eyes on a Land devoid of Beggars, Crooks, Charity,

Chicanery, Chiseling and Profit, it's up to YOU.

If you would like to see your Children growing up in a Land of Equal Opportunity free from discrimination of Race, Creed or Color, it's Up to YOU.

If you would like to see North America inhabited by a race of Stalwart People with Intelligence and Integrity, It's up to YOU.

If you would like to see the Old Folks taken care of Adequately and Humanely before they close their tired eyes to rest forever, It's up to YOU.

If you would like to take out the Biggest Insurance Policy in the world for Yourself and Family and leave a Legacy beyond Price to the Loved Ones you must leave behind when you, too, pass beyond the veil, It's up to YOU.

You cannot have any of these Desires met under the Tyranny and Regimentation of the Price System. It just does not work that way.

In the Field of Social Operations, however, all things are possible to Technology. I will do whatever YOU want me to do.

All YOU have to do is to install Technological Social Controls in accord with the Physical Laws by which I must Operate. I can't do it. It's up to YOU.

If you will set me Free from within the Framework of the Price System, I will build Right Here in North America the Richest and Fairest Civilization the Sun ever shone upon.

It will be the First Human Culture in the sorry history of Man, organized and operated for the Prime Function of LIVING. Would you like that? Well, It's Up to YOU!

I AM TECHNOLOGY!

From Here on Out

Keep Your Eye On The Trends

by R. F. Novalis

Increasing Trends..		All-Time LOW	Latest HIGH Figures*
1. DEBT (U. S. Govt.) per person.....	January 1, 1840	\$0.21	\$1,939.00
2. ENFORCED LEISURE (unemployment).....	October 1944	630,000	1,830,000
3. MACHINE TOOLS in use** (cumulative total).....	1925	700,000	1,800,600
4. BANK LIQUIDITY (percent deposits to reserves, Federal Reserve Banks).....	1921	60.0%	98.00%
5. GOVT. (U. S.) BONDS to total bank invest- ments (Federal Reserve Banks).....	1929	39.0%	94.00%
6. GOVT. (U. S.) BONDS to total life insurance investments	1915	.0005%	60.10%

Decreasing Trends		All-Time HIGH	Latest LOW Figures*
1. PRODUCTION (combined factory-mine-railroad freight) Index basis 1919-20 monthly aver- ages equal 100	Oct.-Nov. 1943—250		187.
2. MAN-HOURS WORKED (total of man-hours in factory-mine-railroad) (Note: 1919-20 month- ly average was 2.54 billion) Actual number.....	Oct.-Nov. 1943 3.14 billion		2.45 billion
3. MAN-HOURS PER UNIT in above industries, combined average	1919-20=100		40%
4. ENFORCED SCARCITY (load factor on installed capacity of above industries)	No Figures		22%
5. INTEREST RATES (combined average yield on Govt.-municipal-corporate bonds)	1919-20 6.12%		1.70%
6. OSCILLATION DOWNWARD of factory output since all-time peak (Oct.-Nov. 1943).....			37%

* November-December, 1945

** No figures available on number of machine tools scrapped

Ed. Note: See January-February "Great Lakes Technocrat" for detailed explanation of this table

* Note: Figure on Item 6 of Decreasing Trends in January-February issue Volume 3, No. 8, page 24 should have read 22½ drop instead of 40.

Bet You Didn't Know This

A very clever and extremely useful machine has been on the market for some time and which has not been given proper publicity or credit. The machine takes very little room and is propelled by means of a pedal attachment, by means of which a fulcrum lever converts a vertical reciprocal motion into a circular movement.

The principal part of the machine is a huge disc that revolves in a vertical plane. Power is applied through the axis of the disc and work is done on the periphery, where the hardest steel, by mere contact, may be reduced to any shape.

The machine is called a grindstone.

(*Machinists Monthly Journal*, November 1945.)

There are only 11 steam boilers in the entire world capable of generating 1,000,000 pounds of steam per hour. Each one is as wide as a four-lane highway, as tall as an 8 story building and burns a carload (45 tons) of pulverized coal every hour. One of these units can heat 10,000 average dwellings in the winter time, figured on a basis of 100 lbs. of steam per hour per dwelling. Where are these giant generating plants? In Asia? No! In Africa? No! In Europe? No! In South America? No! They're all right here in the U.S.A. (From an ad by Combustion Engineering in *Fortune*, January 1946.)

From the Camera's Eyeview

A World of Technology

Watch The Facts March By

Let's attend a Technocracy meeting. Here is one that was held at Maccabee's Auditorium, Detroit, on January 27, 1946. Barney Ocasek, Authorized Technocracy Speaker of Section 15, R. D. 8141, Cleveland is on the platform.

It is fashionable these days to talk about 'One World.' Every 'right-thinker' in the land, whether politician, pulpiteer, or private enterpriser, is hard at it now. This Speaker goes them all one better. He is analyzing the two worlds that exist side by side under the Price System. These are: 1) The old world of toil and scarcity with the ignorance, insecurity and low degree of General Welfare it produces. 2) The new world of power and abundance, with its emerging high culture of science and technology which is struggling to be born. The old world of toil and scarcity, like the poor of Holy Writ, has always been with us. In fact, one produced the other, and vice versa. The new world of science will outlaw these ancient dictums of the Price System.

As we take our seats, the Speaker is telling almost half a thousand Americans about the social aspect of science. This vital subject is taboo in the 'free press' and the little (or big) red school house. It is anti-Price System. That's why it's taboo. That's why Americans go to Technocracy meetings. They want the facts. The Speaker talks about the physical factors that shape our common destinies. These facts dictate a new concept of citizenship so that when events demand social change, we may avoid chaos and move out of the old Price System world into the new world of science. Technology is the means whereby we live. After all, most people like to live, don't you think? The catch to it is that to live in an Age of Power, we must learn how. The time in which to learn is short. If we do not learn now, the time in which to suffer will be long. Here are a few scenes from the new world of Technology.

(continued on page 32)

ACS Photo, R. D. 8141





Photo: Stokes and Smith Company

Technology, is it for women too? Of course! They're the better 50 percent of the human race, aren't they? Here's an attendant feeding empty containers into an Automatic Duplex Auger Filling Machine. The unit fills a container every second with any kind of powdered or granular products used for foods, groceries, drugs, chemicals, etc. The fill is precise and clean. Goodbye, guess work.



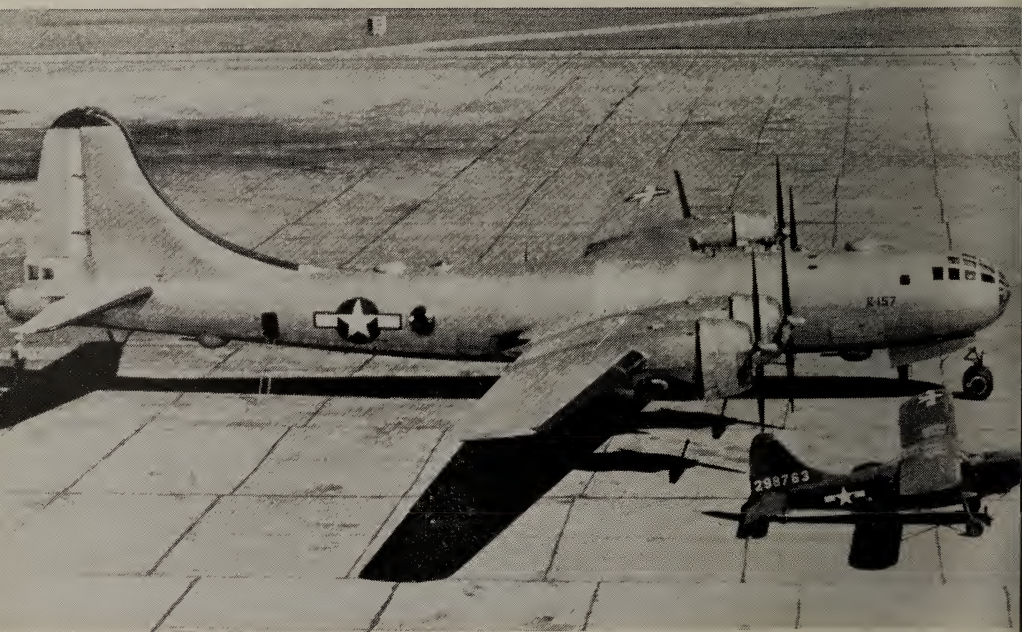
Photo: Towmotor Corporation

Power is the great equalizer, the common denominator of this age. Women can control it as well as men. Installing Towmotors in this plant packaging food products for overseas shipment cut the man-hours involved in handling operations 61 percent. This lady, with power, raises a pallet of 20 bags weighing 1600 lbs. and stores it neatly on a platform 7' above the floor. Goodbye toil.



Photo: International Harvester Company

Design is the essence of technology. Here's the giant TD-24, 17 foot, 18 ton TracTracTor and the little 8 foot, 1050 lb. Farmall Cub. Each one is designed for its job. The Cub with 10 hp is designed for the 2,000,000 farms of less than 40 acres. It has a full line of attachable implements. The TD-24 is equal to the power demands of large scale farm projects, earth moving or lumbering.



Official Photo USAAF

Another sample of design, a B-29 bomber and a tiny liaison type plane. Engineers understand about design. The right kind of engineers understand that if a social system is to operate for the General Welfare, it must be designed for the job. Any intelligent North American can know that much. Technocracy has the design for a scientific social-industrial system. It will distribute abundance.



ACS Photo. R. D. 8141

A scene from another Technocracy meeting. It's at the Portage Hotel, Akron, January 20, 1946. John Spittler, Authorized Technocracy Speaker of Section 1, R. D. 8342, Detroit, is on the platform. His theme is '70,000,000 jobs.' In the Orient every coolie has a 'job.' If we want 70,000,000 'jobs' here, we have to take fascism too. Technology dictates a minimum of toil for abundance.



Photo: Maryland Casualty Company

When a house of cards collapses the top cards fall farther and harder than the rest. Get the idea? The issue before North America today is not 'One World' or how to make the atom behave. It is the adoption of technological social controls, or chaos. There is top insurance against social chaos waiting to be taken out. If we don't take it out, it's going to get very tough in the good old U.S.A. soon.



ACS Photo, R. D. 3141

'Knights of Energy'

(continued from page 25)

Now the talking is finished and the time for action has come. Here are the sign-up tables at the Ocacek meeting. About 10 percent of the audience decide they want to do something about it. That's why they're joining Technocracy. They will go through the Technocracy Study Course. There they will get a fundamental orientation in the scientific approach to social problems. They will analyze the Price System and discover exactly why it stinks. They will also analyze the synthesis of Technocracy and the concept of Technological social controls. This knowledge is not available anywhere else in North America except through prodigious effort and long years of searching study. It cannot be bought for love or money. Technocracy provides it free to all members.

Technocrats know that there is only one world worth striving for. It is the world of power, technology and science. The only alternative is social fascism. Just recently a quarter of a million young Americans gave up their lives in a war against social fascism. Remember? They didn't die for a Price System 'One World' of superstition, ignorance, disease, toil, scarcity and insecurity. That's the ideal of international fascism. That's the apotheosis of the ancient Price System. That's the only kind of a 'One World' it is physically possible for the Price System to set up. Our boys didn't die for that, did they? Then what else could it have been for, except the America that has been a dream in everyman's heart for generations; the America that was always becoming but never quite became the reality of that dream. They died to make it possible for us, who live, to make that dream come true. How about it, Mr. and Mrs. America?

Do you want to see your own country sold into social fascism? Are you sick of muddling, futility, hypocrisy, sophistry and moronic statesmanship? Are you fed up with snares and delusions; tired of chasing Price System rainbows? Do you want to do something about it to help yourself and fellowman? Then join an Organization where your efforts will count. The place to begin 'saving the world' is in North America. If America goes down, world civilization is doomed. The motherland of technology is here. The 'brotherhood of man' begins at home. Let's usher in the new world of abundance for all right here. **INVESTIGATE TECHNOCRACY.**

Primer of Technocracy

The Engineers' Full Production Program

By George Moody Wolfe, 12247-7

How Full Production Is Now Prevented

When people want goods and are able to buy, then the more plentiful the goods are, the lower prices they bring.

Whenever goods are produced to be sold for profit, *abundance must be prevented*. If all goods were abundant, like air and in many places water, then nothing could be sold for any price. So, of course, profits would not be possible.

Producers and dealers for profit MUST try to keep the selling prices of their goods high enough and the costs, which include the wages of their employees, low enough to make profits. If prices are too high or wages too low, many consumers are unable to buy enough goods. If prices are too low or wages and other costs too high, many producers and dealers are unable to make profits. So they MUST shut down business and disemploy their men.

Producers and dealers save costs of production and handling not only by paying low wages but also by employing machines instead of men, thus producing more goods for sale, while fewer consumers are permitted to earn money to buy them.

It is not possible for competitive private enterprise to secure maximum production because competition is enormously wasteful and also because many private owners are not able to afford the most efficient machinery.

Private enterprise prevents abundance by a number of devices. Among these are the fabrication of inferior

articles, monopoly controls, high prices, restricted production, buried patents, cartel agreements and well-planned waste.

Whenever more goods are produced for sale than can be sold at a profit, they MUST be destroyed or stored to keep the market supply scarce, prices high, and profits possible. Then producers MUST stop or slow down production and disemploy men.

The Government then borrows money to scantily support and to pacify the unemployed and their dependents. It also loans money to producers to help them buy more efficient machinery, to disemploy more men for the Government to support.

Government debts increase taxes while both business men and the unemployed workers are made less able to pay taxes. Government debts are increasing faster than population or the national income while employment in industry goes down.

If permitted, the Price System will disemploy so many millions that the Government will not be able to support them either with direct relief or by employment on public works. This will further reduce consumers' buying power, lessen the demand for production, cause more industries to shut down and disemploy still more men. If continued, there will be a complete breakdown both of business and Government, with starvation, violence and chaos.

How To Obtain Full Production

Ever since 1920, even through the Great Depression, America had and now has sufficient resources and ma-

chinery to produce and distribute plenty of all necessary goods for all of us. As long as the resources and machinery are privately owned, however, there will be produced only as much as the owners hope to sell at a profit. In order to secure freedom to produce a full supply for consumers, the resources and machinery must be owned by a national partnership of all consumers.

Machinery must be made to do as much work for us as machinery can do, and the work that human beings only can do must be divided evenly among all persons between certain age limits.

Costs of goods will be measured by the amount of NON-HUMAN ENERGY used to produce and distribute them. The total amount of such ENERGY available for use will be apportioned periodically, as follows:

1. For Overhead Costs: Production of productive equipment; support and education of all under working age; support of all inmates in institutions; all other free goods and services, maintenance and renewal of productive equipment.

2. For production and distribution of goods and services for all others of working age and over.

This last portion of the available non-human energy will be paid out evenly among all persons in this class. Each will receive ENERGY CERTIFICATES, with which he may purchase as great a share of goods and services of his own choice as his share of the available energy will produce and distribute.

Daily reports of consumers' demands will indicate the rate of production necessary for a full supply without overproduction or under production. It will be a Balanced Load System.

The Energy Certificate will make

hoarding of purchasing power for future security unnecessary and impossible. Energy Certificates will be non-transferrable, non-negotiable, non-interest bearing, non-savable, and good only during the stated 2-year production period.

All taxes will be abolished. The cost of public services, for which taxes are levied under a Price System, will be met by deducting that cost from the total available energy (see Item 1 above) as a part of Overhead Costs.

There will be no debts, rents or profits. All useful goods and services for which individuals pay money in a Price System will be distributed directly on the basis of their cost in energy. The need for transferable money has passed in North America.

Most of our exported surplus goods will be exchanged for goods of which we cannot produce enough. For some we shall receive money of the foreign countries. Americans who wish to travel in those countries may exchange some of their Energy Certificates for the foreign money and whatever money they have left when they return to North America, they may then exchange for Energy Certificates.

Many kinds of goods and services will be produced in so great an abundance and at so small cost per unit that it will be more economical to distribute them free, and record the total bulk costs as overhead, than to compute the costs per unit and record the amount distributed to each individual consumer. Among the numerous free services will be health services, local travel and communication, use of assembly halls, admission to all public assemblies, complete education, and possibly water, light and power for homes.

The various industries and services will be classified into departments with

local and regional controls as needed. Responsibilities and duties will be clearly defined. Workers will be employed in their chosen occupations and locations and graded according to proven fitness. Unpleasant jobs will be eliminated or upgraded. Persons of working age whose Price System occupations are abolished when the new system is set up will be reemployed in lines for which they are fitted, on the basis of qualifications.

The officers of each department will be selected by officers above them in the same department who know them and their record. All employed persons will be directing or performing work not for limited wages for themselves or for the profit of private employers but for the benefit of all citizens who need the goods and services being produced. They must work efficiently in order to hold their rank. Besides, the more efficiently they all work the greater will be the general abundance which all will share.

Refusal to work, that is refusal to participate in necessary production, will not be tolerated. People who do not want to work will have their heads examined by competent psychiatrists. There will be no bums, either high-class or low-class.

The directors of all departments together will constitute a general control board, whose chairman subject to removal will be the chief executive, bound to serve the entire nation.

Social Effects of Full Production

By an assurance of plenty for all, the chief causes of greed, graft, bribery, blackmail, extortion, official favoritism, fraud, theft, personal discord, class distinctions, conflicting class and sectional interests will be removed. Without transferable money, there CANNOT be any black markets, kidnaping for ransom, gambling for purchasing power, traffic in vice or

injurious products, or profiteering in war. Thus, the Engineers' Design for Full Production and Direct Distribution will indirectly eliminate more than 95 per cent of all crimes and set up a pattern of human relations which will favor and encourage morality, goodwill and brotherly conduct. The chief purpose of social controls will not be to tell people what they must not do, but will be to discover and carry out most efficiently and economically what the people want done.

The purpose of this whole program is to serve all individuals as fully as possible. Whenever a consumer spends his Energy Certificate, he will VOTE for the goods and services that he himself wants, and he will get them if it is possible to produce and deliver them.

The fullest possible personal liberty, consistent with the general safety and welfare, depends upon an assurance of continuous plenty for all. Plenty for all can be secured, not by wishing or moralizing, not by a political government even with a form and pretense of democracy trying to regulate competitive private enterprise which cannot distribute plenty, but by public enterprise with a concerted Full Production Program managed by competent technicians who know how to get big jobs done.

As we increase production, while lessening the need for human labor, an important purpose of the New Education will be instruction in the beneficial use of leisure time.

There will be full freedom of belief, assembly and expression consistent with the General Welfare. There will be full scope for ingenuity, individual initiative and competition in useful services, cultural activities, hobbies, games and sports, but no freedom for gaining economic advantage and domination over fellow citizens.

No individual, young or old, married or single, will be dependent upon any other individual for material support. No one will be compelled for the sake of a living to submit to any other person's harsh domination or to live or associate with any one who is persistently abusive, offensive or repulsive.

Marriageable persons will be free to choose mates according to mutual attraction, to set up homes and to have children with full assurance of their support.

Discrimination in any form against individuals or minority groups on a basis of race, religion or color will be severely prohibited. All citizens will be guaranteed equal opportunity to advance.

Thus ALL of the unattained ideals of political democracy, i.e., plenty, security and personal liberty, will be attained in the fullest possible measure without any need for political parties, campaigns, petitions, lobbying or general elections.

Furthermore, with full production America, the richest nation in the world, will be more able than ever before to give needed help to less favored nations.

For this Program we do not need to wait for anybody's moral reformation; only for the people to recognize the necessity of working together with competent leaders.

THIS IS TECHNOCRACY!



They Saw the New America

'Into the discovery of the proximity fuse and its fashioning went the work of from 600 to 800 scientists—physicists, chemists, astronomers, electrical engineers.

'At the top was a co-ordinating force that pulled it together—the center of this remarkable nervous system linking so many first-rate minds with so many different skills. The Office of Scientific Research and Development kept in touch with all the scientific projects covering every phase of war research.

'The tieup with industry was very close. Industrial technicians and researchers were in on the whole project. The Navy gave it unlimited backing.

'Nothing like this has ever happened before. Here is the pattern for the solution of all man's life, if only we had the courage to use it in peace as in war.

'Who can say how long it would take to discover the cause and the cure of cancer or infantile paralysis with 600 or 800 men and women working together toward a common goal?

'As these scientists talk about their work, you catch a glimpse of this other world of infinite possibilities. They have seen it. For a brief time, working under the stress of national peril, they've been a part of it.

'And now that peace has broken out, they are seeing it disintegrate. The coherence and the strength that were in it are running away like quicksilver. You can hardly believe that it ever existed.

'Having had a vision of another way of life, they are more aware than most of us of the conflicts and distortions of what we laughingly call normalcy.'—Marquis Childs in his column in the *Chicago Daily Times*, September 29, 1945.

'Nine-tenths of the thinking in America is directed against the interest of 90 percent of the American people.'—Marlene Dietrich, movie star. (As quoted by the *American Freeman*, April 1946.)

Technocracy and Your Trade

The Flour and Grain-Mill Worker

By Organization Division 8741-1

'Down By The Old Mill Stream'

Bread and grain products contribute more than 25 percent of the calories and protein in the national diet or almost as much as is derived from meat, poultry, game and fish combined. This fact makes the Flour Mill and Grain Products Industry an important segment of America's technological structure.

The outstanding characteristic of the industry, according to the Bureau of Labor Statistics, 'is the small amount of labor, relative to output, required in the milling process. This is due to the fact that the machinery is nearly automatic, requiring few attendants.' The Census of Manufactures reveals that in 1937 the industry rated 73rd in a list of 105 industries, as an employer of labor, but was exceeded by only 8 larger industries in the amount of electric energy used per man-hour of labor.

The Flour and Grain-Mill Products industry includes establishments engaged in the manufacture of flour, meal and feed from wheat, corn and other grains. The Census of Manufactures limits the definition to 'merchant' mills which purchase grain, process it and sell the products. It does not include establishments manufacturing mixed feeds or cereal preparations or those grinding grain on a contract basis. The latter are called 'custom' or 'grist' mills. Merchant mills account for over 95 percent of all grinding operations.

'There Was A Jolly Miller'

T.N.E.C. Monograph No. 7 has the following to say of the social per-

formance of the industry. First, let us repeat part of T.N.E.C.'s definition of social performance. 'The acid test of business is not the profit-and-loss statement but the social audit.' By this is meant 'maximum production of goods and services; maximum consumption; maximum payrolls; minimum cost (to consumers); maximum employment; full utilization of capacity.' These factors are all measurable. Now how does the Flour Milling Industry rate?

Monograph No. 7 states that, 'In the flour and grain-milling industry all trends have declined from 1919 to the present day' (1940). Here are some excerpts from its analysis:

'... employment and payrolls exhibit a downward tendency throughout. ... payrolls have, if anything, declined faster than employment and ... faster than the number of dollars which the industry absorbed from the public. Not so the dividends and interest payments.

... from 1927 to 1929 although production remained the same, employment went down 10 percent and payrolls were off nearly 7 percent. Dividends and interest increased 20 percent and nearly 9 percent more was taken from consumers.

... in 1935, dividends and interest had declined less than 7 percent from the 1927 level while production had gone down more than one-sixth and payrolls more than one-fourth. The industry, in short, seems to have done its best to pay out dividends

and interest. A priori one would expect that the consumption and production of flour would be the one to hold up best in hard times. It would seem to be the kind of article that people would have to buy. Interestingly enough it declined nearly 20 percent during the depression. One would expect a priori that this industry would have given consumers steadily more for their money. Instead, as the figures show, the industry did not permit its product to decline in prices faster than the declines that occurred in wages and in prices in general.

'Oh Wad Some Power —'

So much for the social performance of the flour milling industry. It is plain that the industry has been a nice, fat cow for its owners. No social blame attaches to them, the T.N.E.C. report to the contrary notwithstanding. The type of anti-social behaviour exhibited here is in strict accord with the Operating Rules of the Price System.

The cardinal rule of this system is to grab all you can hog and jjar loose with as little as you have to. We all exist under that type of a social system, don't we? We all unite in maintaining it, don't we? We all try to excel under it, don't we? Then what else do you expect? The Price System is geared to the interests of the few. Then, you may ask, where does the Flour and Grain-Mill Products Worker come in? Well, let's have a look at the other side of the record.

Technology Will Out

The peak number of establishments in the industry was reached in 1909 when there were 11,691 plants. By 1939, thirty years later, 9548 of

them had permanently retired from the Price system, leaving only 2,143 still operating. The peak of employment was reached in 1919 with 45,481 workers. By 1939, twenty years later, 20,710 of them had been permanently retired from the industry to enforced leisure with scarcity. In 1909 the 11,691 plants and the 39,453 workers of that year produced 105,757,000 barrels of wheat flour. Thirty years later, in 1939, 9,548 less plants and 14,682 less workers produced 5,612,000 more barrels of flour.

1919 was the peak year in production of wheat flour when over 132,000,000 barrels were turned out. If we take 1929 to equal 100, then in 1919 production stood at 110.9, man-hours at 172.5, output per man-hour at 64.3 and labor cost per unit of output at 130.7.

By 1939 production declined to 90.8 and man-hours to 84.3. But output per man-hour rose to 107.7 and labor cost per unit declined to 96.9. This adds up to only one conclusion. Technology had been hard at work in the industry. The proof is in the breakdown.

During the period there was about an 18 percent drop in production. To compensate the harried owners of the industry, however, the labor cost per unit of output dropped about 26 percent and total man-hours of labor bought and paid for fell about 51 percent, while that good old angel of free enterprise output per man-hour rose about 40 percent. Could anything be sweeter?

Who cares whether the nation consumed 20 percent less flour products during the long depression? Who cares whether the purchasing power of Flour Mill workers fell 52 percent? Who cares that over 46 percent of them were technologically displaced

between 1919 and 1939? Who, indeed, cares about the 'social audit' of the Price System or any part of it so long as pickings are good? As long as the cash register tinkles its merry tune, social problems can go hang. Who cares?

There is a great deal more to be said about the Flour and Grain-Mill Industry and its workers. Space limitations forbid us from telling the full story. It has been told, however, in the authoritative reports of the Bureau of Labor Statistics, the National Research Project of the W.P.A. and in the T.N.E.C. reports, from which the data here cited has been drawn. Any one who can read may get the full story there. However, there is one more aspect of the impact of technology upon the Flour and Grain-Mill Products Industry that should be mentioned.

Unfinished Business

The Bureau of Labor Statistics says that: 'The milling equipment in use today is largely automatic even in the smaller establishments. Virtually all basic machinery used in flour milling was fully developed prior to the period covered by the present study. The few improvements after 1919 were for the most part of minor importance.' Technology is not yet finished with the flour milling industry. Two major fields remain unconquered. These are a higher degree of concentration and integration in the industry with larger plants where technology can be applied on a greater scale and the introduction of more automatic packaging machinery. There is great activity in both fields.

In 1921 five large companies milled about 23 percent of the total output. By 1935 just 3 companies milled 29 percent of all production. Centralization of baking facilities has also

worked in favor of large mills. Other factors are at work activizing the impact of technology. Among these are a shift in the centers of the industry from the Northwest to Buffalo, Kansas City, and points in Oklahoma. This favors the building of new mills with better technologies than those of the older milling centers.

One manufacturer of packaging equipment advertises as follows: 'What! Grandma in the packaging room? Yes. And doing a Bang-Up Job, Too.' The ad pictures a One-man (or woman) bagging unit that will 'weigh, fill, pack, checkweigh and sew five 100 lb. bags of feed a minute.' There's 'no lifting of filled bags.' The 'entire job requires only placing empty bags in bag holder, releasing filled bags and guiding them through sewing machine.' The weighing and packing is automatic. No skilled help wanted. To point up the Price System compulsion involved, the ad concludes as follows: 'A 4 oz. overweight per bag on 8,000 tons a month equals a dead loss of \$1000 every 30 days. Accuracy or Loss.'

Percentage Favors The House

That's the point, all right, accuracy or loss. It would be an accurate statement to say that the Flour and Grain-Mill Products Worker is playing in a game where the cards are marked and stacked against him. He hasn't got a Chinaman's chance. What of it if hourly wages in the industry are higher than they've ever been, if these are paid out to an increasingly smaller number of workers. It's the total mass purchasing power that counts in overall social results. Technology has advanced to the point in this industry where a handful of giant mills, operating around the clock, can supply all North America with an abundance of flour products.

Under the tyranny and regimenta-

tion of the Price System the advances of technology spell out a loss to the human components of the system. They mean a loss in employment opportunities, standard of living and General Welfare. A few always benefit. That's the way a Price System works. What if employment did rise somewhat during the war? It must be plain to even the most obtuse coupon clipper by now that this world war is over and there isn't much chance of getting another one under way for some time.

Oh, Tempora! Oh, Technology!

In the meantime technology hammers away at the Flour Industry. All the feather-bedding schemes of labor leaders and all the monopoly conspiracies of good old 'free enterprise' cannot stop it. The process is unidirectional, irreversible, irresistible and self-perpetuating. It affects all North Americans, among which are included the flour industry workers. Where are the 20,710 workers displaced between 1919 and 1939? Some are dead. The rest are eking out a precarious existence in other lines and making conditions tougher for the workers there. We have been illustrating the American social dilemma of the Power Age, high-lighted by one industry. There is a solution to this common problem.

The solution which is compulsory is not a political, moral or financial prescription. These are all futile in the face of advancing technology. The remedy consists in a complete overhauling of the entire social system and a redesigning of it along engineering instead of business lines. The remedy is the application of scientific principles to social problems. The solution of the employment and social problems of the flour industry worker is tied up with the overall solution of the modern American social problem as a whole.

In the last 25 years a Body of Thought has been built up in North America, which is specifically oriented toward such a scientific solution of social problems. It has been examined, tested and retested by the aristocracy of brains in North America and found to be adequate. This Body of Thought is known as Technocracy. Technocracy is neither anti-labor, anti-capital or anti-government. It is purely and simply pro-scientific, which means in the last analysis that it is pro-humanity. After all, nearly all the worthwhile things in modern civilization came about through Science. That is the cue for every North American. Mr. Flour worker, it's getting very, late. It's high time for you to wake up.

INVESTIGATE TECHNOCRACY!

Judiciously Speaking

'By concentration of Governmental power and drafts upon the Federal Treasury, we have now a financially "busted" great piled-up mass of Governmental confusion beyond human comprehension; impossible of democratic control, extravagant, wasteful, inefficient, and by its nature, the instrumentality of favoritism, tyranny, oppression, and corruption, and

the destroyer of the self-reliance and self-respect and Governmental capacity of the people, qualities without which no people can remain free.'—Representative Hatton W. Summers (Dem. Texas), Chairman of the House Judiciary Committee, and veteran of 34 years in Congress (*New York Times*, March 10, 1946.)

Technology Marches On

Kilowatt-Hours or Man-Hours

By Research Division, 8741-1

Making Machines Creates Jobs?

One of the pet 'come-backs' you always hear when the subject of technological disemployment is discussed, is the one that goes like this:

Well, maybe machines do take away jobs, *but it still takes men to make those machines* . . . Ha!

That this has been known to be a fallacy, by Technocrats, for well over a decade has still not convinced many well-meaning but fact-lacking Americans. So here are the facts, based on data found in the latest (1939) census of manufactures.

Those who offer this perennial denial of machines, any machines, causing permanent disemployment, attempt to prove it by mere 'logic,' simply because it is obvious that men are still doing work in the machine tool factories, the plants that turn out tractors, etc., ad nauseum. If pressed, they may admit that there are exceptions to their rule, but the total effect 'comes out even,' or maybe a net disemployment so small as to not upset their pet theory in the slightest.

Machine tools, being the only 'machines that make other machines' can be taken as a criterion because they are

recognized as the spawners of mechanization, sharing the basis of our Power Age with the turbines in our utility plants, which latter drive the tools. Of course, the 'come back' sometimes includes tractors, Diesel locomotives, and other job-displacing machines, but the machine tool is even the progenitor of these.

Well, *is there* a net disemployment? Do machine tools, taking the best example, cause more unemployment than they require in their own production?

The most effective and final way to answer those questions and settle this previously perplexing (to some people) poser, is to determine what is the proportion of human toil to extraneous energy in that industry as a whole. How many man-hours were worked compared with the amount of power used from coal, oil, gas, and electricity.

United States Machine Tool Industry—1939

Total employment: 36,600 wage earners.

Average hours per week per man: 43

Total man-hours: 81,640,000.

Power Consumed

Converted into British Thermal Units

Bituminous coal	3,880,220,000,000
Petroleum	1,602,600,000,000
Electric power	359,366,000,000 (purchased)
Manufactured and mixed gas	221,000,000,000
Anthracite coal	156,400,000,000
Natural gas	141,255,000,000

Total 6,360,841,000,000 BTU

This total is the equivalent (at 3,411 BTU- 1 kw-hr) of 1,865,000-000 kilowatt-hours,

Which, in turn, is the equivalent (at standard engineering rate of 13 man-hours - 1 kw-hr) of 24,245,-000,000 man-hours of work performed by extraneous energy,

Which, in turn, is *exactly 300 times the amount of energy expended* by all the man-hours put in by all the men in our machine tool plants.

Now, have you any more posers, please?

Ed. Note: See *Man-Hours and Distribution*, pages 7 to 16.

The American Way

'S. H. Williston, vice president in charge of operations of the Cordero Mining Co. of Nevada, recently explained the differences between the American and Spanish Quicksilver operations. He pointed out that Spanish ore is high grade, about 180 pounds of quicksilver to the ore ton. United States ore is low grade, about 10 pounds to the ore ton.

'Spain uses 2200 men to operate a 200 ton a day plant—10 men or more to a ton a day. United States mines, even with low grade ore (but because of efficient operations) use only one man to three tone of ore. Spain's highest yearly wage is \$240, while the United States' average is \$2400 a year.' (*Mining Record*, January 10, 1946.) Ed. Note: See *Science v. Chaos*, page 8.

'The Compleat Angler'

A new fish canning machine is enlarging the hearts and pocketbooks of the Columbia River Packers Association at Astoria, Oregon. Each machine displaces about 17 men. The mechanism was invented by E. H. Carruthers of Warrenton, Oregon, a former Cornell University professor. It is called the 'Pak-C-Lector.'

Strange to relate, up to six years ago there wasn't a single tuna packing plant on the Northwest Pacific Coast. Now a score of canneries handle a tonnage approaching that of Southern California.

Just why tuna weren't caught in Northwest waters until 1936 is a mystery. The chances are they've been running there for thousands of years in the Japanese Current which flows about 100 miles off the Oregon coast. Its waters average 52 to 60 degrees Fahrenheit, which is about 10 degrees higher than the surrounding ocean.

Tuna fish run in that broad stream of warm water in great schools. Not much is known about the tuna fish except that it spawns at sea and appears off the Northwest coast about mid-summer. The Northwest tuna is a different species from that caught in the south. It is called the Albacore and is said to be the tastiest of the tuna family with exceptionally white meat. Albacore fetches double the average price of other tuna. In 1937, the first tuna-fishing season, over 1,000,000 pounds were caught. In 1944 the catch was over 33,000,000 pounds. Albacores run from 10 to 30 pounds in weight each. Packing capacity in the Northwest is now large enough to handle all the catch.

The 'Pak-C-Lector' automatically sorts and weighs the tuna slices and packs them into a can. It puts a half pound of fish in each can with mathematical precision. 'Prime asset, however, is the economy of manpower. Three machines run by six operators can pack double the quantity of tuna that can be handled by a 28-operator hand line.' (*Wall Street Journal*, January 5, 1945.) Ed. Note: See *Technocracy Study Course*, bottom half page 151, page 152 and top two-thirds of page 153.

Read All About It!

The Serveu Vendor Company of Berkeley, California has announced a weather-tight coin-vending machine for selling newspapers. The unit requires no school kids, cripples or old men in attendance. Its maker says that the device can be adjusted to handle publications of different sizes. The machine turns down tokens and magnetic slugs and can be equipped with a change maker when it vends papers that sell for less than a nickel. (*Business Week*, December 29, 1945.) Ed Note: We feel like giving up on this one but try looking at page 9 of *The Technocrat*, January 1939.

Then and Now

The Bureau of Agricultural Economics in a recent report summarized the comparison between typical family operated farms in the hard winter wheat belt as they were in the five years before World War I, and the five years before World War II. The report emphasizes that the farms studied are typical of the area but not average farms since many farmers have not modernized.

THEN

Typical Farm 1913-1918

Size—330 acres

Acres of wheat.....	180 acres
Production of wheat.....	1835 bu.
Investment in work animals.....	\$805
Investment in machinery.....	\$472
Farms with tractors.....	None

NOW

Typical Farm 1938-1942

Size—660 acres

Acres of wheat.....	330 acres
Production of wheat.....	3687 bu.
Investment in work animals.....	\$108
Investment in machinery.....	\$1,680
Farms with tractors.....	99%

'What has brought about the astounding gains in farm productivity in the last thirty years? How did farmers manage to forge ahead in wartime, turning out a third more production with at least fifteen per cent less effective labor than in pre-war years?'

Secretary of Agriculture Anderson comments on these questions of his own as follows:

'The answer encompasses thousands of items of research, invention and development of new farm skills. Under broad headings they include such things as increased mechanization, greater use of fer-

tilizer and lime, a good start in conservation-type farming, improved control of pests and disease, better feeding of livestock. *Outstanding is power.* (Italics ours.) It is estimated that in 1940 our farms had in one form or another more than 174,000,000 mechanical horsepower, including one and a half million tractors. Today farmers have about two million tractors—a gain of more than 40 per cent during the war.' (*U.S.D.A. Clip Sheet*, January 6, 1946.) Ed. Note: See *Technocracy Study Course*, bottom of page 256 and pages 257 to 260.

Shade of Lord Salisbury

Richard Groetchen, a Chicago engineer, has invented a rotary machine for cooking steaks, chops, fish and fowl. Before going into manufacture, he tried it out on the public. He bought a restaurant in Chicago and installed one of his machines in the kitchen. The machine is an enclosed unit about the height of an average man, and a yard in diameter. An endless conveyor goes around and around inside, at pre-set speeds, depending on what is being cooked. Rare, medium or well-done orders can be cooked automatically by adjusting the rate of speed of the conveyor and the intensity of the gas flames.

Each order is placed in a pre-heated metal casserole so as to sear it and retain all juices. The casseroles are put in through a window on one side and after being carried around on the conveyor come out a door on the far side ready to serve. Cooking is accomplished by two banks of specially made ceramic fire tiles upon which the gas flames play. The cooking takes place under reflected heat at 800 degrees Fahrenheit.

Gas and air are pre-mixed before being blown into the burners. Thus, there is said to be no carbon-monoxide in the cooking chamber. A one-sixth horsepower motor operates the conveyors. The Groetchen rotary cooker is a time, labor, fat, food, spoilage and waste saving device. One man can turn out 2500 short orders in 12 hours. Oh, yes, the machine cooks hamburgers, too. (*Chicago Daily News*, November 15, 1945.) Ed. Note: See *Northwest Technocrat*, Volume 9, Number 100, page 7.

Each in His Own Tongue

By Publications Division 8741-1

Voice of The Price System

Poor Little Rich Feller

A large qualification should be necessary for membership in the upper house in order to represent the principle of property. The rights of the minority must be protected, and the rich are always fewer in number than the poor.

John A. Macdonald, first Premier of Canada, at the Conferences on Confederation of British North America, held at Quebec between October 10 and 29, 1864. (As reported in the *Chicago Tribune*, November 12, 1945.)

That'll Be \$5.00 Please

It should be perfectly clear to everyone that regimentation always leads to totalitarianism, and it always begins under one guise or another with medical practice. Since when have our people become so dependent as to need security from the cradle to the grave.

Dr. Herman L. Kretschmer, former president of the American Medical Association, before the House of Delegates of the AMA at the Palmer House December 2, 1945. (As reported in the *Chicago Daily News*, December 3, 1945.)

Maybe They Started The War Too

If the OPA deliberately had devised a scheme to bring about a housing shortage it couldn't have done a better job.

Arthur W. Binns, president of the National Real Estate Foundation, before a member's meeting of the Chicago Real Estate Board, January 9, 1946. (As reported in the *Chicago Daily News*, January 10, 1946.)

Talking Jackass

The law of supply and demand is a divine God-given law. The sooner we let God's laws operate without human interference, the sooner we will have prosperity.

Congressman Dudley G. Roe (Dem. Md.) speaking in the House in opposition to a provision giving the OPA an appropriation to combat black markets and racketeering. (As reported by *Labor*, February 23, 1946.)

Maybe They're Zombies

Never in 22 years as an undertaker have I seen the like of it. People keep coming in and asking if maybe someone's died and left a nice apartment empty. It don't seem nice, exactly, but I guess people get so hard up they'll try anything.

Bill O'Hara, Chicago undertaker, in a press interview. (As reported in a story in the *Chicago Daily Times*, December 16, 1945.)

Double or Nothing

Only last night a man came in to see if any of the dead had left apartments. He offered me \$50 if I could give him a tip.

I've got two kids and need an apartment myself.

J. Weinstein, Chicago undertaker, in a press interview. (As reported in a story in the *Chicago Daily Times*, December 16, 1945.)

How About Foxholes?

You can't find anything in the Constitution that says the government has to build houses for the citizens. The real estate business naturally and properly belongs to the real estate men.

Congressman Fritz Lanham (Dem. Tex.) Chairman of the House Committee on Public Buildings and Grounds, in a speech before the United States Savings and Loan League. (As reported by the *Washington Star*, November 28, 1942.)

Planning The Post-War Gravy

'... said housing or any part thereof shall not, unless specifically authorized by Congress, be

conveyed to any public or private agency organized for slum clearance or to provide subsidized housing for persons of low income.

Section IV of the Lanham Act of 1941, providing for war housing. (As quoted in *The Nation*, January 5, 1946.)

It's A Long Road

Let it be laid down in the first place, that humanity must remain as it is . . . Unequal fortune is a necessary result of inequality of condition. To suffer and endure is therefore the lot of humanity; let men try as they may, no strength and no artifice will ever succeed in banishing from human life the troubles that beset it.

Pope Leo XIII in his encyclical *Rerum Novarum*. (As quoted by the *Converted Catholic*, March 1946.)

Voice of Technology

He Ought To Know

The only difference between a politician and a statesman is that a statesman can read and write.

Richard R. Nacy, executive vice-chairman of the Democratic National Committee, to a meeting of downstate Democrats at Springfield, Illinois. (As reported in the *Chicago Daily Times*, January 18, 1946.)

How About 'Free Enterprise'?

A free country is one in which there is no particular individual to blame for the existing tyranny.

Mickey Rooney, movie star. (As

quoted by the *American Freeman*, May 1946.)

They Call It A Job Trust

As long as organized labor insists on following a policy of spreading scarcity . . . instead of helping to produce and share abundance, neither the shipping nor any other industry in America stands much chance of meeting the great challenge facing the capitalistic economy today.

Senator Joseph R. Ball (Rep. Minn.) in a speech to the 19th annual meeting of the Propellor Club of the United States and the American Mer-

chant Marine Conference, October 18, 1945. (As quoted in the *Chicago Sun*, October 19, 1945.)

Go To The Head Of The Class

The control of any discovery which may vitally affect the lives of all of the people can only be adequate and satisfactory, if it is designed solely for the welfare of all the people. For example, the release of atomic energy was accomplished by the efforts of all of our nuclear physicists and of many hundreds of other scientists, engineers and technicians, most of them trained in our nation's schools, colleges, universities and laboratories. . . . The point is that the discovery was, in the broadcast sense, the result of a collective endeavor by all of our peoples.

Senator Brien McMahon (Dem. Conn.) Chairman Senate Special Committee on atomic energy, in an article in the *New York Times Magazine*, February 24, 1946.

It Can Be Measured

Democracy as we know it is a political institution of the eighteenth century handed down by middle class traders who wore periwigs and wrote with quill pens. 'Life, liberty and the pursuit of happiness,' still expresses the aspirations of this democracy. It is the problem of our time to reconcile the formula with social and technological trends that cannot be arrested.

Waldemar Kaempffert, science editor *New York Times* in an article in *Tomorrow*, January 1946.

America Has The Men

America, which came into ex-

istence after the Dark Ages, has always shown an almost religious respect for human inventiveness. It has been maligned for its technological enthusiasm, but it has discovered and proclaimed the power and joy of engines, skyscrapers, planes, electricity, of cleanliness and health, of harnessed energy and cheap production and distribution of goods. America needs leadership which is equal to our present standards of scientific knowledge and progress.

Dr. Martin Gumbert, a New York physician and writer, in an article in *The Nation*, January 5, 1946.

Remember Lot's Wife?

After all, the liberal economic views of Pope Leo's Encyclical on Labor, the Bishop's Program of Social Reconstruction, and the Statement of the Archbishops and Bishops of the Administrative Board of the N.C.W.C. are more conservative than the views and politics to which they are opposed, *for they go back in spirit and essence to the Middle Ages.* (Italics theirs)

From the official textbook, *Catholic* (Roman *Principles of Politics*, page 167, written by the late Msgr. John A. Ryan. (As quoted by the *Converted Catholic*, March 1946.)

Weight of Opinion

'Abraham Lincoln, worn out by the appeals of two rival seekers for a minor office, weighed their petition papers and appointed the man whose references were the heavier.'—Ernest Hix in *Strange As It Seems*, *Chicago Sun*, September 13, 1945.

So Wags the World

Fascism (Social Reaction)

vs.

Anti-Fascism (Social Advancement)

By Research Staff Great Lakes Technocrat

North America

United States

Last September a poll was taken in the U. S. Army stationed in Germany to uncover the soldiers' attitude towards Nazism. The poll included 1700 soldiers and officers said to represent a true cross-section of the Army. Here are some of the results.

Twelve percent of those interviewed said they believed some races were superior or inferior by nature. Another 16 percent were undecided on this point. Nineteen percent believed the Germans had some justification for starting the war. Twenty-two percent believed that Hitler had 'good reasons' for persecuting the Jews. Twenty-four percent said the Germans had 'very good' or 'fairly good' arguments in claiming that since Germany was the most efficient country in Europe she had the right to a controlling influence on the Continent. Twenty-eight percent agreed with some of the Germans' explanations as to why they went to war. Twenty-nine percent said they had grown 'more favorable' toward Germany since coming to the country. Thirty percent said they liked the Germans better than the English or French. Finally, 51 percent said they thought Hitler had done Germany a lot of good before the war.

Commenting on this evidence of lack of correct orientation in the American Army, Dr. Isador Lubin, statistician and former associate mem-

ber of the United States reparations commission, had the following to say:

I am not at all surprised at these results. They are testimony to the failure of the orientation work of our Army. Apparently our orientation specialists never did impress upon our boys just what it was they were fighting against or what it was that they were fighting for. They were not given a picture of what Nazism really was or what it stood for.

The only trouble with Dr. Lubin's analysis is that it doesn't dig deep enough. The U. S. Army's Information and Education Department is not responsible for this pro-fascist sabotage of the mental attitudes of our soldiers. The Army Orientation Course got off to a good start. It prepared and put out some excellent programs. Navy officials were so impressed that they asked for the material for the Navy.

A scientific and impartial analysis of the race question titled *Races of Mankind* was written for the Orientation Course by outstanding anthropologists. It was suppressed by order of the House Military Affairs Committee after some copies had been issued.

On March 24, 1945, the Army issued Orientation Fact Sheet #64, an 8-page leaflet, analyzing fascism. Here are a few excerpts:

... Fascism is a way to run a

country . . . it's the way Italy was run, and the way Germany and Japan are run. Fascism is the precise opposite of democracy. The people run democratic governments, but fascist governments run the people. . . . Fascism is government by the few and for the few. . . . The objective is seizure and control of the economic, political, social, and cultural life of the state. Anyone who is not a member of their inner gang has to do what he is told. They permit no civil liberties, no equality before the law. . . . They make their own rules and change them when they choose. . . . They maintain themselves in power by use of force combined with propaganda based on primitive ideas of 'blood' and 'race' by skillful manipulation of fear and hate, and by false promises of security.

Fact Sheet #64 was distributed to all U. S. service installations throughout the world. Then the pro-fascists at home got busy. Indignant speeches were made on the floor of Congress. The Chief Counsel of the House Military Affairs Committee demanded an explanation from top Army officials. The Information and Education Department of the Army was shaken down. Topnotch personnel were transferred to other duties where they could have no chance to furnish facts to the rank and file of the Armed Forces. The Orientation Course was thoroughly emasculated. After this shake-up at the top, Fact Sheet #64 did not get much emphasis any more. Is it any wonder that American soldiers did not 'know the score' when they got to Germany? Chalk up one victory for pro-fascism at home.

J. I. Yellot, director of research of the locomotive development committee sponsored by a group of railroads in conjunction with the Bituminous Coal Institute, predicted recently that the gas turbine will soon become an important factor in railroad technology.

Experiments have been successfully made with coal burning gas turbines at the Institute of Gas Technology, Chicago; Johns Hopkins University, Baltimore; and the Battelle Memorial Institute, Columbus. Coal is pulverized to the consistency of fine talcum powder. Says Mr. Yellot:

The burning of the coal under pressure is accomplished with the aid of simple equipment resembling in principle the aircraft jet propulsion compressors. The removal of the fly ash in the form of a dry powder is achieved by the use of a battery of small mechanical cyclone separators.

He said that 'the high thermal efficiency of the gas turbine will reduce the coal requirements of a typical locomotive to about 25 percent of the consumption of the standard steam locomotive.' Maintenance costs of operating a gas turbine locomotive will also be much lower than for a diesel or steam engine.

Super-alloys for use in jet engines and gas turbines were recently shown at the 27th National Metal Exposition at Cleveland. 'All told there are about a dozen outstanding new alloys that could not have been made before the war.' Some of these contain high percentages of cobalt, chromium and nickel for heat resistance.

The new super-alloys fall, roughly, into three classes, forged, wrought and

cast. The forged alloys are designed to stand temperatures up to 1300° F. The wrought alloys are for parts that operate up to 1500° F. The cast alloys are said to show promise of service up to 1900° F. Super-alloys developed in this country are far superior to those employed in Germany.

Canada

A brown caterpillar called the spruce budworm has infested one-third of Canada's forest area. The infested territory extends in a belt about 300 miles wide and a thousand miles long, reaching from the Manitoba border to the St. Maurice River in Quebec. About 250,000 square miles of forest land are involved. The worm is eating its way through Canada's forests three times faster than trees are being cut down by logging operations.

Forest experts say there is little hope of preventing the spread of the blight in two or three years into Maine and the Maritime provinces of Eastern Canada. The spruce budworm is a native of North America. It feeds on the new, green growth of balsam and spruce and on the buds at the tips of branches. In two years a tree is stripped and killed.

Forestry ranks fourth among Canadian industries. Thus, the spruce budworm blight is a direct threat to the future of Canada. C. D. Howe, reconstruction minister, calls it a 'national disaster.' The Canadian Pulp and Paper Association thinks the worm may have destroyed enough pulpwood in the last 10 years to make \$8,000,000,000 worth of paper. Paper is Canada's most important export.

Forest experts suggest that the blight was brought on by commercial logging practices of the last 150 years. These cut away the pine and spruce leaving the less commercially valu-

able balsam. Being thus favored, the balsam multiplied. Since balsam is the spruce budworm's choicest meal, the worm also multiplied. Immense damage to the physical resources of Canada is resulting because business upset the dynamic equilibrium of nature in its sacred pursuit of 'free enterprise.' Chalk up another victory for pro-fascism at home.

Approximately 60,000 additional horsepower will be added in 1946 to Canada's present 10,000,000 hp of available hydro-electric energy. In the last 13 years the amount of electrical energy generated in Canada has more than doubled. About half of this increase occurred since 1939. The manufacturing and mining industries used about three-fourths of the power generated by central stations. Electric motors do four-fifths of all the work in these industries. In the mining industry there was a 500 percent increase in electric motors operated between 1933 and 1940. Latest figures indicate that over 9 kilowatt-hours of electricity are consumed in the manufacturing and mining industry for every man-hour of labor employed. Four-fifths of Canada's potential water power is still undeveloped.

A Technical Information Service has been set up by the Canadian Government. Hundreds of scientists and technicians will be put to work solving problems for Canadian industry. Inquiries are said to be coming in at the rate of 30 a week. Some typical inquiries are:

Can oxychloride cement be used for kitchen drainboards? What's the newest process for making concrete building blocks? How do you recover iron and titanium white from titaniferous ores?

South of The Rio Grande

Argentina

Thirteen 'top secret' Nazi documents captured in Berlin were recently released by the State Department. They were made public in Buenos Aires by John Moors Cabot, U. S. Charge d'affaires there. The papers were sent to Berlin by Erich Otto Meyhen, German embassy charge d'affaires, after the German ambassador left Argentina. They furnish proof of Nazi connections with the Peron machine.

Most of the subsidized newspapers and newspapermen in Argentina, working for Peron now, are the same ones who were formerly subsidized by Hitler's government. Among others, the documents revealed that *El Pueblo*, a Buenos Aires Catholic (Roman) newspaper, was subsidized monthly in Reichsmarks to the tune of \$990. Charge d'affaires Cabot said that *El Pueblo* was never placed on the blacklist out of courtesy to the church.

Mexico

In 1910 the population of Mexico was 12,000,000. Today it is 21,000,000. Two-thirds of the people live on the land yet 'fail by a wide margin to feed themselves and the city dwellers.' Mexico imports corn from Argentina, wheat from Canada and rice and sugar. However, the country is making strong efforts to industrialize. Progress can be reported in the establishment of irrigation projects, the building of hydroelectric plants and the elimination of illiteracy.

Over 100 irrigation projects are under construction at the present time. These will bring under cultivation about 25,000,000 acres of cropland. A hydroelectric plant nearing completion on the Atoyac River near Pueblo will furnish 20,000 horsepower. This plant, and others, are counted on to furnish power for the country's industrialization program.

By special act of the government, every person between 18 and 60 able to read and write is held responsible for teaching one illiterate how to read and write. The drive was launched in March 1945 under the slogan, 'Everyone Teach One.' Minister of Education Jaime Torres Bodet, has carried the project to every corner of Mexico.

By the end of 1945 almost 48,000 'collective centers' of teaching had been established with public funds. Another 17,000 were sponsored by private citizens. Ten million copies of a primer have been printed and distributed. A recent count showed almost 2,000,000 persons enrolled in anti-illiteracy schools. Within the first 6 months almost 300,000 passed their exams and graduated.

The 1,500,000 Indians, speaking over 20 different dialects, are a special problem. Bilingual primers in Spanish and dialect are used for them. Instruction is given all illiterates in reading, writing, spelling, arithmetic, history and natural science. Minister Bodet reported the 1945 budget allowances for education to be the highest in Mexico's history. A large number of permanent schools are also under construction.

Europe

Germany

The Potsdam agreement, signed by Britain, U. S. and Russia, provided that Nazi assets would be seized wherever found and used to help pay reparations. When the Allied Control Council was set up in Germany, it was assigned the responsibility of finding these assets. The Council agreed to quadripartite action by U. S., Britain, France, and Russia, in the search for and seizure of hidden Nazi assets. The Council felt that the participation of Russia would be desirable even though the Soviets' share of German reparations had already been decided by the Big Three at Potsdam.

There was no question involved as to how the funds would be distributed. All assets would be under the control of the Council to be distributed later to nations claiming reparations. The only point involved in the quadripartite agreement was who should be authorized to seek out the assets. To implement this decision, the Allied Control Council promulgated its law No. 5, covering this point. Nevertheless, the Soviet Union has been neatly frozen out of the search for assets in western Europe. Here's how they did it.

The U. S. State Department, in the Fall of 1945, instructed Lt. General Lucius D. Clay, Chief of the U. S. Military Government, and Russel Nixon, deputy director of the division of investigation of cartels and external assets of AMG, to seek a 'division of labor' agreement with Russia whereby the Western powers would keep out of the search for German assets in Eastern Europe in return for Russia's keeping out of the search in Western Europe. Both Clay and Nixon objected. Nixon exposed

the plan and called it a 'dirty deal.' The State Department backed down and told them to drop the subject. It had a better plan.

Early last Winter, the Paris Conference on Reparations was held to discuss the division of German assets other than those already earmarked for the Soviet Union and Poland. For this reason Russia did not participate.

Holland, Belgium, Denmark, Luxembourg, Czechoslovakia and Norway were represented. A paragraph was slipped into the agreement which gave each of the signatory nations, which included the above, the right to search for hidden Nazi assets within their own boundaries and seize them for reparations. This stipulation of the Paris Conference was contrary to law No. 5 of the Allied Control Council. Under the Council law, Russia would be included in the search. Under the Paris Act, she is excluded. General Clay told a press conference on February 26, 1946, that he had been instructed to vote for an amendment to law No. 5, bringing it in line with the Paris Act.

In the meantime, Russel A. Nixon resigned and came back to this country. He was asked to testify by the Kilgore Committee on war mobilization. Quoth Mr. Nixon:

If Russia were allowed to join in it would lay bare the Fascist or reactionary regimes in countries such as Spain, Portugal, Switzerland, Sweden and Argentina and would reveal all the elements of collaboration of certain interests in the allied countries with these regimes.

As the plot now stands, Russia has

the dominant voice with regard to Nazi assets in Bulgaria, Hungary, Romania, Finland and Eastern Austria. All other external Nazi assets, including those overseas, are being handled by Britain, France and the U. S. However, no matter who gets what, a large part, if not the most, German assets are safe under cover in Sweden, Switzerland, Spain, Portugal, Turkey and Argentina, outside the orbit of the United Nations. They planned it that way.

In Sweden there are 233 German owned firms; in Switzerland 214; in Spain 112; in Portugal 58 and 35 in Turkey, according to testimony given the Kilgore Committee by Orvis Schmidt, director of Foreign Funds Control for the Treasury Department. In 1944 the Swedish Patent Office granted 10,000 patents, the largest number in any one year in its history. Over 60 percent were on behalf of German interests. In the first half of 1945, the Swedish Patent Office was again snowed under. About 80 percent of the patents granted were to Germans. The Federal Economic Administration, now liquidated, in its final report revealed the following facts. In 1944, Germans from neutral countries met in Alsace to plan the movement of German assets abroad. As the net closed around Germany, an official of an international relief organization used his pouch to transfer moveable assets from Turkey to Switzerland. Twice a month, in 1944, a high German official flew to Stockholm to sell diamonds, stolen from the Dutch, on the Swedish black market.

The FEA says that the Allied Control Council has a legal basis in international law for acquisition of these assets since it is the successor of authority in the German State. It further says that the job is neces-

sary because German plans for a third world war are known. No wonder they liquidated the FEA in such a hurry. Can you smell the next world war cooking?

Russia

'During the war years, 10 blast furnaces, 32 open hearth furnaces, 16 electric steel furnaces, 14 ferro-alloy furnaces, 21 rolling mills and tube mills, and 13 coking batteries went into operation in the Soviet East. From 1940 to 1943, the output of coal in the Urals doubled. Its power resources, too, almost doubled during the war. Some stations increased their capacity five times and more. The Urals machine-building industry increased several hundred percent during the war. It also set up its own machine tool industry.'

The use of electric power in Soviet industry is over 9 times greater than in 1913. In 1945 rural electrification made great progress. About 600 hydroelectric plants and over 800 steam power plants were put into service in 1945. The program for 1946 envisages 1600 hydro plants and 1000 steam plants. Most of the hydro-plants were small units set up on small rivers and lakes, and designed for local use. It is estimated that small rivers in Russia have a potential capacity of 6,000,000 kilowatts.

In 1928 there were only 1,600 collective farms. Today there are 217,000. Before collectivization began there were 25,000,000 small peasant-holdings and the country was unable to supply its own needs for grain and other produce.

'Science has been of primary importance in the development of the national economy.' In February 1931, at the first Conference of Industrial Workers; Stalin put forward the slogan, "*Technology in a period of reconstruction decides everything.*" (italics ours)

In the Question Box

By Speakers Division 8741-1

1. How many people are Technocrats?
2. If Technocracy is adopted, just how will those who centrally administer the Technate be chosen?
3. Why shouldn't Technocracy's benefits be extended to the whole world? C.G.B.

These three questions are often asked of Technocracy speakers. Let's take them in rotation. First, as to the number of members. The reason Technocracy doesn't stress its numerical strength is because that attitude is Price System bandwagon psychology. A great many people think that if enough other people are swallowing a certain line of guff, there must be something in it. Americans are great multipliers. They love to add a little bit to a story before they pass it on. They are also great joiners. Almost any ideology that promises enough can find an army of followers.

The political and social history of U.S. is replete with world-saving movements that waxed prosperously for a brief day, and then waned into oblivion. Where are the more than 600 pseudo-Technocracy organizations that arose in the early 1930's? They sprang from the financial brains of racketeering promoters to exploit the nation-wide and world-wide social impact caused by the real Technocracy. They have gone the way of all other four-flushing movements in our national history, leaving behind them, by their lying misrepresentation, an epitaph that spells out only a bad legacy to handicap the real thing.

There was only one Technocracy then, there's only one now and there'll only be one in the future. Technocracy refuses to clown to satisfy the milliard-headed army of moronic joiners and followers. It refuses to cater to Price System psychology or employ Price System methods. Among these are a long list of names of illustrious jackasses on your letterheads, testimonials from great and near-great stuffed shirts, and an imposing roll of memberships. All these signify only zero, multiplied over and over.

The point is NOT HOW MANY are the Technocrats but HOW CORRECT are they? If you are the only one who is correct and everybody else is wrong, you are a majority of one. Men do not make events. Events make men. Nations and cultures do not make events. Events make nations and cultures. Physical events are precipitating North America into a major social crisis from which it will either go backward into a modernized version of medieval Authoritarianism or go forward to a higher form of civilization.

Our job is to find enough alert, intelligent citizens, and educate them about the physical trends so they can direct our beloved land into a higher culture. It won't take so many. There is a pool of Americans who have not been too badly contaminated by the Price System. Let's find them. By this time you will have guessed that this writer either doesn't know how many Technocrats there are, or he doesn't want to tell. Both guesses are correct. If he knew, he wouldn't tell, for the above reasons and many

more. The fact is, however, that he doesn't know. He'll go you even one better. He doesn't give a hoot in hell how many there are. It's the idea that counts.

Your second question is answered in the *Technocracy Study Course Book*. Study Lesson 21 carefully, especially page 229, and you will know as much as this writer does. If you do not have the book, a copy may be obtained at nominal cost from your nearest Technocracy Section.

Your third question takes us into the international field. Before we can summon the gall to offer Technocracy to the whole world, it might be a better idea to install it in North America and get it operating here. Then we would be in a position to make a definite contribution to world improvement. At present we're not. To this writer's knowledge, no official statement has ever been issued by Technocracy that it intended to isolate North America from the world.

The reasons why Technocracy puts the accent on North America are that this Continent is our home, and also because Technocracy's analysis and synthesis was made on the basis of physical conditions here. However, the trend of world events affects North America and is constantly taken into account by Technocracy. What more can any one ask? One thing is sure. Technocracy is not in favor of the rest of the world first and America last. Technocrats are not agents of any foreign power. They are North Americans, first, last and straight down the middle. If we *really* want to help the whole world, the best way to do it is to clean out our own Augean stable first. Don't you agree?

Can I, with only a little time, a little education, and little energy become a Technocrat?

M. A. C.

The answer is most decidedly yes. If you are a responsible citizen from any walk of life or economic level and desire to advance the program of Technocracy, you are eligible. Regarding your three self-proclaimed limitations, let's examine them, one by one. First you say you have only a little time. The point we wish to bring out is that no one has any more time than you. Arnold Bennett put it this way:

You wake up in the morning and Lo! your purse is magically filled with twenty-four hours of the manufactured tissue of the universe of your life . . . No one receives either more or less than you receive. Waste your infinitely precious commodity as much as you will, and the supply will never be withheld from you. Moreover, you cannot draw on the future. Impossible to get into debt!! You can only waste the passing moment. You cannot waste tomorrow, it is kept for you.

Try keeping a budget of your time for a week. Draw a simple chart, divided into quarter hour periods to cover twenty-four hours and seven days. Carry it around with you and every hour or so mark down in the correct time space what you were doing. At the end of the week, total the various items, such as time spent in working, eating, sleeping, necessary domestic duties, movies, etc., etc. You will be amazed at the low load factor on your time devoted to socially useful items. We're not trying to preach at you. After all, you know, time can be measured.

As a second limitation, you say you have only 'a little education.' What a fortunate man you are. Price System education is mostly mis-education. Except in the technical and

scientific fields, nine-tenths of what the Price System teaches us as culture is a fraud. There is a vast difference between intelligence and education. A person can be educated till it runs out of his ears, and still be very stupid. A great many are. On the other hand, a person can be ignorant and at the same time be very intelligent. It is no crime to be ignorant. But it is a crime to be stupid, a crime of the Price System.

Any alert, intelligent citizen can understand and help to promulgate Technocracy's analysis and synthesis. You don't have to be an engineer or a scientist. With all due respect to the functional competence of these gentlemen, most of them are socially stupid. There are too many miseducated smart fools, who know all the wrong answers to social problems. That group is the *real* common herd. It is a privilege not to belong to it. Fortunately, the process of intellectual corruption is not yet universal and complete. There is a pool of citizens in all walks of life with innate intelligence. We suspect you belong to it.

Your last objection about too little energy need not deter you. What is too little energy? Superman would say that anyone who couldn't jump over the Empire State Building had too little energy. By his standards, he'd be correct. By ours, he is a freak. Leaving out sickness and senility, every adult human body generates, on the average, about the same amount of energy. There isn't a great deal of difference. There is, however, a tre-

mendous difference in how various people apply their energy.

The point of all this is that we're not trying to reform you from a static state of social incompetence into a dynamic condition of social functionality. If you want to be dynamic and functional, nobody can stop you, not even yourself. You will yield up every Price System value for the privilege. If you don't want to be, all the moralizing this side of hell can't stir you into it. It's entirely up to you.

In case you had not thought about it, there is something to get excited about in this problem. It's America herself. Have you seen her? It's a great land., the fairest on this whole earth. From the tropical seas to the Arctic Ocean, she has been endowed, by the slow process of physical evolution, with every material thing necessary to sustain a high civilization. It's your land, as well as our land. What do you think the Technocrats are working for? Glory? No! It's for America.

There's precious little glory in bucking the vast ocean of Price System Philistinism. There's no reward waiting for the Technocrats for social functionality. There's no pay; no honor; no recognition. But, there is a tremendous satisfaction in playing the role of founding pioneer to a higher form of civilization. Make no mistake, that is what is occurring before your very eyes. Yes, you can be a part of this great drama. Why not? It's lots of fun. Investigate Technocracy!

The House That 'Jack' Built

More than 16 percent of all city housing in the U.S. is without running water. About 33 percent has inadequate inside lighting. About 50 percent has inadequate daylight or ventilation. About

66 percent has dangerous or inadequate heating and no inside private toilet. More than 66 percent has no private bath.—From a National Housing Agency Statement (as quoted in the *Chicago Sun*, December 23, 1945.)

Modern Design

A war-developed, pocket-size recording set may soon become part of the newspaper reporter's standard equipment. This device, due for an early test by the Milwaukee *Journal*, may be entirely concealed, except for a small microphone. It records all sounds within several yards on a magnetized, stainless steel wire, which may be played back any number of times, apparently lasts indefinitely. *Forbes*, August 1, 1945.

Small gauges made of synthetic sapphire outlast steel gauges 300 to 1. That's the claim put forth for these small tools which cost only four to six times as much as their steel or tungsten carbide counterparts. Now being tested in a number of Chicago factories, the sapphire tools are the product of one of the country's biggest watch makers.—*Wall Street Journal*, August 2, 1945.

25,000,000 PAPER BAGS A DAY

In one day 25,000,000 paper bags are produced at the world's largest kraft paper mill and bag factory at Savannah, Ga. It takes thirty-two freight cars to ship them away, says The Associated Press. (*New York Times*, January 20, 1946.)

'Industrial engineers today tailor-make new factories to meet the special needs of the individual client. The manufacturer's production process and layout is studied, then the building is designed to fit that layout. Many manufacturers are hiring engineering firms to streamline their warehousing and distributing systems. One manufacturer asked an engineering firm to design a warehouse layout capable of receiving goods in carload lots with facilities for storage and distribution in less than car lots, with the operation to be taken care of by one man.' (*Wall Street Journal*, September 18, 1945.)

If we wish to make a new world we have the material ready. The first one was made out of chaos.—Robert Quillan.

Some Technocracy Section addresses in Great Lakes area

- 8040- 2—Box 356, Ambridge, Pa.
- 8040- 3—340 Brighton Ave., Rochester, Pa.
- 8041- 1—1613 East 51st St., Ashtabula, Ohio.
- 8141- 3—39 E. Market St., Akron, O.
- 8141- 4—2237 Front St., Cuyahoga Falls, Ohio.
- 8141- 7—P. O. Box 270, Barberton, O.
- 8141-14—P. O. Box 553, Kent, Ohio.
- 8141-15—10537 St. Claire Ave., Cleveland 8, Ohio.
- 8240- 1—207 N. Washington St., Gallion, Ohio.
- R. D. 8242—c/o Arthur C. Clayton, Marine City, R. 1, Mich.
- R. D. 8242—c/o John Reynolds, St. Clair, R. No. 2, Mich.
- 8341- 1—1430 Adams St., Toledo 2, Ohio.
- 8342- 1—9108 Woodward Ave., Detroit 2, Mich.
- 8342- 2—55 Niagara, Pontiac, Mich.
- 8343- 1—6717 N. Sangamon St., Flint 5, Mich.
- 8439- 1—P. O. Box 81, Station A, Dayton, Ohio.
- 8741- 1—3178 N. Clark St., Chicago 14, Ill.
- 8743- 1—2204 W. Vliet St., Milwaukee 5, Wis.
- 8844- 1—620 S. Broadway, Green Bay, Wis.
- 8844- 2—1011 W. College Ave., Appleton, Wis.
- 8844- 3—135 Van St., Neenah, Wis.
- 9038- 1—4518 Delmar Blvd., St. Louis, Mo.
- R. D. 9041—2428 13th Ave., Rock Island, Ill.
- R. D. 9140—18 N. 5th St., Keokuk, Iowa.
- 9344- 1—30 N. 10th St., Minneapolis 3, Minn.
- R. D. 9344—527 Wabasha St., St. Paul 2, Minn.
- 9439- 1—817 Walnut St., Kansas City, Mo.
- 9648- 1—P.O. Box 178, Warren, Minn.
- R. D. 9737—4442 Bayley, Wichita 9, Kan.

TECHNOCRACY

NORTH AMERICA'S ONLY SOCIAL DYNAMIC

WHAT?

★ Technocracy is the only North American social movement with a North American program which has become widespread on this continent. It has no affiliation with any other organization, group or association either in North America or elsewhere.

★ The basic unit of Technocracy is the chartered Section consisting of a minimum of 25 members and running up to several hundred.

★ It is not a commercial organization or a political party; it has no financial subsidy or endowment and has no debts. Technocracy is supported entirely by the dues and donations of its own members. The widespread membership activities of Technocracy are performed voluntarily; no royalties, commissions or bonuses are paid, and only a small full-time staff receives subsistence allowances. The annual dues are \$6.00 which are paid by the member to his local Section.

★ Members wear the chromium and vermillion insignia of Technocracy—the Monad, an ancient generic symbol signifying balance.

WHERE?

★ There are units and members of Technocracy in almost every State in the U. S. and in all Provinces in Canada, and in addition there are members in Alaska, Hawaii, Panama, Puerto Rico and in numerous other places with the Armed Forces.

★ Members of Technocracy are glad to travel many miles to discuss Technocracy's Victory Program with any interested people and Continental Headquarters will be pleased to inform anyone of the location of the nearest Technocracy unit.

WHEN?

★ Technocracy originated in the winter of 1918-1919 when Howard Scott formed a group of scientists, engineers and economists that became known in 1920 as the Technical Alliance—a research organization. In 1933 it was incorporated under the laws of the State of New York as a non-profit, non-political, non-sectarian membership organization. In 1934, Howard Scott, Director-in-Chief, made his first Continental lecture tour which laid the foundations of the present nation-wide membership organization. Since 1934 Technocracy has grown steadily without any spectacular spurts, revivals, collapses or re-births. This is in spite of the fact that the press has generally 'held the lid' on Technocracy, until early in 1942 when it made the tremendous 'discovery' that Technocracy had been reborn suddenly full-fledged with all its members, headquarters, etc., in full swing!

WHO?

★ Technocracy was built in North America by North Americans. It is composed of North American citizens of all walks of life, Technocracy's membership is a composite of all the occupations, economic levels, races and religions which make up this continent. Membership is open only to North American citizens. Aliens, Asiatics and politicians are not eligible. (By politicians is meant those holding elective political office or active office in any political party.)

★ Doctor, lawyer, storekeeper, farmer, mechanic, teacher, preacher or housewife—as long as you are a patriotic North American—you are welcome in Technocracy.

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Chicago 14, Illinois**

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'I Shot an Arrow Into the Air'

Dear Anne Laurie:

I received the bundle of magazines and pamphlets, 'Fable of the Oracle' and sub-blanks. Thank you again and again; it was the best Christmas present I got; I must read them myself before passing them on.

Your letter also received and explanation of why we were outlawed. I feel a deep sense of shame for my Government when I peruse the subject matter in our magazines.

Enclosing some replies I get; mostly I don't get replies, and sometimes very nasty ones. But I was contacted this way myself, and can't even recall the name of the Technocrat who wrote to me.

My work cannot be evaluated exactly, but some may go to Technocratic meetings because of my letters; a kindlier feeling may be engendered here and there. For my part it is no exaggeration to say my study of Technocracy has been the greatest thing that has ever happened to me. I wear my button with pride. If sometimes the magnitude of the work we engage in overwhelms me I take heart at the knowledge that in other places Technocrats are working hourly in this feverish race against time.

One of the walls of my small sitting room is used for a 'display' of charts, and those wonderful photographs of machinery. You may be sure the photo of Howard Scott in one of the magazines you sent occupies an honored place.

I will not expect a reply to this letter. I know you are as busy as I.

And whatever befalls, we have the wonderful satisfaction of saying together:

'We have done what we can.'

Salute!

Mrs. Alice Butala
Divide, Sask.
Canada

GREAT LAKES TECHNOCRAT

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GREAT LAKES TECHNOCRAT

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Illustrating the Futility of Price System Methods of Operation; Interpreting the Trend of Events from the Social Aspects of Science; and Presenting the Specifications for Total Mobilization for Peace!

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TECHNOCRACY LITERATURE

MAGAZINES

Technocracy,

155 East 44th St., New York 17, N. Y. 15 cents, no subscriptions.

The Technocrat,

8113 S. Vermont Ave., Los Angeles 44, Calif. 15 cents, \$1.50 for 12 issues.

Northwest Technocrat,

813 Pine Street, Seattle 1, Wash., 15 cents, \$1.50 for 12 issues.

Technocratic America

R. R. No. 2, Box 110, Fontana, Calif., 5 cents, 50 cents for 12 issues.

Technocracy Digest

625 W. Pender Street
Vancouver, B. C., Canada, 25c.; \$1.25 for 6 issues; \$2.50 for 12 issues.

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and

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'Big Town'

The Arsenal Of What Democracy?

By Harry Smith, 8342-1

A blight has hit the heart of America's great cities. There is no point in kidding ourselves any longer, it is there and it is spreading. Still worse, scientific diagnosis shows that the disease is malignant. We may as well admit that too. Political quacks in the city hall will continue to finger their beards, hem and haw and pass political prescriptions. In desperation they will consult with economic quacks in Washington who will finance the cost of palliatives, but politico-economic ministrations will merely prolong the final agony. 'Big Town' is doomed. Not many will mourn its passing. Except for a favored few who preempted its choice quarters 'Big Town' never was a decent place in which to live. It has become a hellish menace to the welfare of all. If enough of its functional population survives the city's disintegration and if its industrial equipment is not destroyed, the city of today will be replaced by something entirely new, a functionally designed and operated structure—an urbanate. Urbanates will eventually absorb all of the Continent's non-agricultural population.

Crossroads of Commerce

CITIES EXIST for two purposes:

Industry and Business. Industry is the technical means of producing physical wealth (goods and services). Business is the exploitation of Industry for a profit. Up until the time of the invention of the steam engine in the latter part of the 18th Century, physical wealth was produced by muscular energy, hand tools and a few primitive wind and water wheels. The cities of antiquity and the Middle Ages were built and operated largely by human toil and hand tools. They were limited in size by the amount of fuel, raw materials, food and finished products that could be transported on the backs of animals, in carts and in sailing vessels. It is doubtful if a city of one million inhabitants ever existed previous to the year 1880. Big Town is a steam city.

Business, the means of exchanging man-hours of labor for industrial products and of trading one product for another, evolved from a status of primitive barter to a complicated sys-

tem of exchanges based on commodity evaluation employing debt claims (money) as a medium of exchange. We shall call this system a Price System irrespective of whether ownership in the system is held by individuals or collectively. Its basic manipulations were known and the rules of the game had been formulated by economists, legalized by political government and sanctified by the church by the time America became a Nation. Fundamentally the Price System has not changed. It was born of human toil, hand tool scarcity, and still depends for its success on two conditions, i.e., scarcity values and the flow of money through wages and salaries paid for man-hours of labor. Abundance, actual and potential, now threatens all values in North America, and man-hours of purchasing power is a declining quantity. The system is fast becoming inoperable. This is observable in the decay of cities. Big Town is a Price System town.

Industry, on the other hand, has undergone bewildering changes since 1800. Process has displaced handicraft, line production has displaced

batch production and automatic controls are fast displacing manual controls. A vast mechanical complex powered with extraneous energy (gas, coal, oil and hydro power) has been created here in America, and it is lodged in our cities.

America's troubles result from a conflict between these modern physical realities and antiquated philosophical concepts, legal prescriptions, property rights, debt, interest, taxes, value and price. Big Town and its population is becoming a major casualty in this conflict.

A word about politics: Political government is merely an adjunct of business. The purpose of political government is to control people in a way favorable to business. If in the pursuit of profit a small amount of social welfare accrues, it is only an accident. Political government holds the cow while Business milks her. She's drying up. Big Town is a political town.

'Wonderful City of Oz'

The modern American metropolis is a monstrosity produced by attempting to install and operate 20th Century mechanisms in a 19th Century layout. Every attempt to change the layout so that it may conform more closely to the pattern demanded by high energy, technological operations runs smack into Price System barriers.

Suppose the widening of a street is proposed, immediately the System sets up its interference. How much profit can be made out of the project? Who will get it? Which influential individuals and corporations must be favored? What will be the political implications? Will the taxpayers stand the 'rap'? Does the law require that the proposal shall be put on the ballot so that the citizens may decide on the basis of opinions a question which should be decided on the basis of

facts? The answers to these questions will determine whether or not the project is to be undertaken.

Suppose enough politico-economic agreements can be arrived at; suppose the project is okeyed! From then on to completion, the engineer's design and the construction will be sabotaged by politicians, lawyers, bankers, real estate promoters, property owners, suppliers of materials and labor union leaders. When completed, the project will be only a piece-meal improvement, unrelated to any scientific overall operational design.

How does a city get its spending money? Taxation, of course! The money available for city government administration, maintenance, public service, education and changes in a city's layout is limited by the amount of taxes which can be collected. For 15 years the valuation of taxable real estate has been declining steadily. In Detroit, in 1930 it totaled \$3,750,000,000. In 1945 the total was \$2,250,000,000, a drop of 40 percent.

When assessed valuation declines, there's only one thing to do; that is, increase the tax rate. The tax rate per \$1,000 has steadily increased in Detroit from \$20.15 in 1930 to \$29.42 in 1945, a rise of 46 percent, or an average increase of 61 cents per thousand valuation a year. Buildings on which the income was not sufficient to meet the high tax rates have been torn down. Big Town is pock-marked with open spaces now occupied by parked cars, hot dog stands and 'pitchmen' where once stood buildings of high taxable value. This practice forces the tax rate higher. Then, more buildings, unable to meet the higher rate, are torn down, still further increasing the tax rate. A downward spiral has been started which can end only in complete city bankruptcy.

Let's take a look at one of our 'Big Towns'! The *Detroit News* recently published a series of articles by James Sweinhart on Detroit's widespread and rapidly extending structural decay. Credit is due the *News* for much of the statistical data which follows.

Monument to Free Enterprise

When Detroit was incorporated in 1806, its area was one-third of a square mile. By 1916, a period of 110 years, it had expanded to only 47 square miles. But, during the next ten years it annexed 92 square miles, more than twice the growth made in 110 years, reaching its present area of 138 square miles. What caused this mushroom growth? The 'horseless carriage' which for 15 years had been slowly growing out of the cobbling stage popped overnight and out came the automobile industry, a shiny steel monster, using line production, machine tools and extraneous energy. It squatted down in Detroit's broad, elm-shaded avenues and started to expand, make money, and stink. Detroit never recovered from the shock.

Between 1930 and 1940, about 70,000 families with incomes sufficient to finance the purchase of suburban homes and motor car transportation moved out of Detroit, leaving residential and business property to those unable to escape. It's easier to run away from a problem than it is to solve it.

A slum is a loathsome place where people live who cannot afford anything better. More than 20 percent of Detroit's residential and small business area has sunk to the status of a slum. Five percent more is already blighted. The blight is spreading. Fear of movements of hated racial groups is jeopardizing values in other

sections. In all, about 30 percent of the city's area is affected.

The monster belches clouds of soot, ash grit and other disagreeable refuse, which precipitate on the city at an annual rate varying from 52 tons to 128 tons per square mile depending upon the degree of prosperity and enforcement of the anti-soot ordinance. Property damage has been estimated at \$20,000,000 per year. A sooty pall hangs over the city at all times, robbing the residents of the health-giving properties of the sun's rays. Between October and June, water vapor holds the soot from chimneys in suspension, filling the air with a gray, slimy mixture that pollutes everything it touches. One's only escape is to sell his city residence and move to the suburbs. Mechanisms for smoke and soot elimination were invented long ago and Detroit has had pollution control laws since 1925, but they have not been enforced. Although elimination of this pestilence would be highly profitable in dollars and cents, business and politics have been too dumb to see the profit.

Detroit's 138 square miles of area represent an expansion over and above the physical requirements of manufacturing, accounting and residential platting of at least 500 percent. This is what happened. The city fathers, overcome by the venal exuberance of real estate boomers, platted about five times more territory than was necessary. Detroit, in common with nearly all other cities, over-estimated its probable future growth. Long-term technological and population trends have made their estimates look silly. As a result of this error, Detroit at present has 318,794 buildings and 469,486 lots; and 150,206 of the lots are vacant. The city has 630 miles of business frontage, the greater part has been serviced with sidewalks, pave-

ments, sewers and water mains. Now note this, only 108 miles of the 630 miles of business frontage has been built up, and 522 miles are vacant. On the accredited basis of 3½ miles of residences to one mile of business establishments, Detroit would have to have a population of 15,000,000 to fill up its vacant business frontage.

'Heaven Will Protect The Working Girl'

To finance the real estate boom the city went into hock up to its legal bonding limit, and is now paying off its indebtedness under refinancing agreements at the rate of \$17,000,000 per year. Consequently, it has little money for anything beyond barest subsistence maintenance. A recent news item, headlined 'Mental Cases Called Peril,' states that the Probate Court committed 650 mental cases in the last six months of 1945. The rate of present commitments is higher. But there is no place to put those committed. Receiving Hospital contains 281 mental patients in space for 126. Probate Court waiting lists of mental patients contain hundreds of names. Where can they go? There is no room anywhere, and meanwhile they are a menace to their families and the whole community.

About 200,000 war workers came to Detroit during the war boom. The city had plenty of space, but no adequate housing. How many persons have been left stranded here without employment cannot be estimated, but we do know that the slums are jammed with them. In thousands of instances, one or two rooms, with inadequate or no toilet facilities, house two or three families. Hundreds of families of five members, papa, mama and children, live, cook, eat, sleep and sponge their bodies in a single room. Twenty

percent of Detroit's population, one family in five, are compelled to live in stinking, dirty, rat-infested, crime and disease-breeding, congested areas.

Comparison of Police data for 1940 taken within Detroit's principal slum area, that bounded by Grand Boulevard, with data taken outside this area, reveals shocking inroads of crime and disease, which no responsible person can long continue to ignore. Juvenile delinquency is 377 percent greater inside the slum area. Persons charged and prosecuted are 300 percent greater. The figures on health data for 1941 show that deaths per 1000 are 153 percent greater inside the slum area; from pneumonia 131 percent greater and infant mortality 48 percent greater.

The slums in the heart of Detroit are not the only ones in this area. New slums have sprung up in the suburbs of Detroit, in Macomb and Oakland counties, all over South Western Wayne County, around Ypsilanti, Ann Arbor and other districts, wherever population groups are stranded.

A recent article in the *Detroit Free Press* contains this statement: 'Michigan's fifteen-mill cities are wearing out.' (15 mill tax limitation is the Michigan law.) 'They are headed for the junk-pile and boneyard unless they get more money to keep going.' The cities mentioned were Battle Creek, Jackson, Flint and Grand Rapids. 'They have practically no money for postwar improvements or development. They have cut down on essential services and worst of all, they haven't enough money coming in to pay for adequate maintenance of their municipal plants at the present level.' The populations of these cities varies from 43,453 to 164,292. So Little Town, as well as Big Town, is diseased.

'From Watt to What?'

We have noted the technological changes which have taken place since the year 1800 and especially during the past twenty-five years. Extraneous Energy built Big Town. Extraneous Energy under Price System controls is the cause of its decay. Modern, high-speed, straight-line, continuous process replaces the old batch process. For the same unit output it occupies less floor space. This means more and greater city deficits.

This is also true of business equipment. Compare the amount of floor space occupied by the old-fashioned ink-slinging office clerks with present day high-speed, semi-automatic accounting equipment. Now that the period of industrial expansion under Price System dominance is virtually over, it follows that in the future, due to more widespread use of such equipment, the required floor space will decline together with human employment. If Big Town's skyscraping office buildings are still occupied, it is because an equal or greater amount of floorspace in other buildings has been vacated.

These statements on the relation of the decline of assessable real estate values to the input of extraneous energy are not opinions. They are observations based on statistical data. Kilowatt-hour statistics for the Detroit area during the 15-year period 1930-1945 show an increase of over 100 percent. Property valuation declined 40 percent for the same period.

Why can't the city fathers persuade financial institutions, such as the big Life Insurance Companies, to invest in large scale, low rental housing projects as long-term investments? The answer, slum housing units packed with tenants from basement to attic really pay high rent dividends

on the relatively small ownership investment. Consequently, if the City has to pay what the property earns, instead of its real worth, the cost of condemnation would be so high that new capital could not raze, clean and build new housing units at a cost low enough to assure sufficient profit at low rentals. Life insurance companies are getting out of the real estate business and are investing their liquid funds in U. S. securities. The record shows that the percentage of U. S. bond holdings to total life insurance investments has risen since 1915 from .005 percent to 60 percent. Total investment in real estate has dropped to the lowest level since 1930. Mortgage holdings have dropped to 15 percent of their total assets.

Cities Are Continental Problems

It is not our purpose here to emphasize the suffering and degradation of slum dwellers. We know that the moral approach to social problems is futile. Pauperizing and degrading humanity is a prerequisite of the Price System. The point is not how immoral are the defenders of the System but how dumb. How dumb to think they can escape the consequences of the System's collapse. Not the consequences of a calloused conscience, but the consequences of physical realities, plagues, crime, uncontrollable fires, mob violence, and chaos.

The economic stability of the nation depends upon the economic status of counties and cities. This stability is fast being undermined. Of far greater importance is the technological stability of the Continent. Cities are centers of vast, highly complicated, closely integrated, highly tenuous technological installations. The lives of 70 percent of the Continent's population depend upon smooth continuous operation. It is a technological,

not a moral problem. If a telephone is in working order, the pure and the corrupted can dial and get their numbers with equal facility. If connections are broken, no amount of moralizing will mend them. Send out a trained maintenance man, be he saint or sinner, and service will be restored.

The factors involved in Big Town's decay do not exist separately, each distinct from the other. They are closely interrelated parts of the city's industrial and social complex. Transportation, water supply, sanitation, smoke and soot pollution, housing, rat infestation, public health, education, recreation etc., are all tangled up with each other. Each is incapable of individual solution.

Clearly, then, the solution lies in an overall design of social operations. Since the city's technological complex is tied-in with Continental operations, closely integrated with agriculture, mining, oil production, forestry, fishing, transportation, hydrology, etc., the design must be Continental in scope. When designed operation is mentioned, we are conditioned to think of politico-economic planned economy which has been much discussed the past fifteen years. We are referring here to something entirely different. Economics is a philosophy, not a science. Economic theories are founded on concepts which have no physical reality and exist only in the minds of men. Consequently they have no exact terminology, are variable and are not subject to measurement. Politics is the art of balancing opinions. When you mix politics and economics into planning, you get an alphabetical nightmare which no human genius can make head or tails out of. Planned economy and designed operation of physical equipment along engineering lines are directly opposite to each other.

Since the problems of city design, construction, operation and maintenance are technological problems, subject to strict observance of physical laws, and the exactitudes of measurement, a scientific solution becomes mandatory. Free the engineer from politico-economic interference and put him to work. Engineering methods have given us the best of what we have today. Only engineering methods can provide for tomorrow.

Technocracy did not start with a moral idea or a preconceived plan. Technocracy started by conducting an investigation. For twenty years Technocracy has been collecting data on the physical factors that are dictating social change on the North American Continent. This data has been correlated and the long term trends charted. Out of this factual data grows Technocracy's scientific analysis and out of its analysis grows its social synthesis. Technocracy stands ready with the basic design for a non-price, non-business, non-political, functional operation of North America.

No More Dog Houses or Slums

America's present big cities owe their existence chiefly to the fact that they have become centers of trade, commerce, bookkeeping, advertising and selling. Wiping out these non-functional Price System activities will turn the greater part of Big Town into junk. Many industries now located in cities will be moved nearer to raw material sources and to points more advantageous to the distribution of finished products. This will necessitate a re-allocation of population. Size and location of the new type of city, the Urbanate, will be determined entirely by the requirements of functional operation of the entire Continental system of production and dis-

tribution of abundance on a balanced load basis. New York City probably will become one of the richest metal mines in the world.

Population in urbanates will be housed in a relatively small number of large size, commodious family residential units, instead of in a large number of small, single family dwellings of today. From an efficiency standpoint, this type of building offers tremendous advantages over smaller units. The energy cost of construction, servicing and maintaining one apartment, for say 1,000 families, is many times lower than the energy cost of 1,000 separate houses each with its separate heating, air-conditioning and cooling systems, water systems, refrigerators, etc. If the entire population of the Continent is to be housed with a minimum of energy cost and a maximum of utility, this type of dwelling is the only answer.

Urbanate housing units will bear little resemblance to present day Price System apartments. They will be commodious, soundproof, vermin proof and dust proof. Each family unit will have its own private entrance and its own private garden or patio and each will share the beautifully laid out park and recreation grounds surrounding the entire apartment building. Each of these may be provided with a gymnasium, library, theatre, nursery with trained child care attendants, cardroom, dance hall, swimming pool, bowling alley, wood-working shops, machine shops and laboratories for the convenience of those who need them in the pursuit of hobbies.

Each building will have its centralized cleaning service, garage, infirmary, kitchen, laundry and other centralized services. Utilities, heat, light, water, sewage and garbage disposal, power, communication, etc., will be

included in the design and all conduits made readily accessible.

A tube conveyor or transportation system, similar to that used in department stores but powered with solenoid magnets instead of compressed air, may be installed. They will be automatically controlled by a device similar to the telephone dial, which will send the tube container to any house or shop in the urbanate, thus facilitating the delivery of mail, telegrams, milk, groceries, etc., and removing the annoyance of delivery men and trucks. For those who insist on single family dwellings, each urbanate will also contain a relatively small number of individual houses.

The Prime Function Is Living

Technocracy has also laid down the design for rural communities, the Agrotechnology Unit. Here the special function of producing and processing agricultural products has dictated the design.

With the departure of Price System interference and the arrival of functional administration, billions of man-hours now employed will be eliminated. Then, too, many persons now engaged in accounting and selling will be available for functional positions. This means less work and more workers, necessitating shorter working periods, longer vacations, and an early retirement age. Work periods of 4 hours a day, 4 days a week, 78 successive days of vacation and a retirement age of 45 are possible. To accommodate vacationists and the retired population resort centers in Mexico, West Indies, California, Florida and at other desirable points in the South and North will be built. Climate and function will dictate the design of these population centers.

Warren S. Thompson in his book 'Population Problems' makes this statement:

It appears to be high time to consider cities as places in which people are to live rather than merely places in which to make goods to sell for money to enable us to make more goods to sell for more money and so on ad infinitum . . . a city civilization in which the deaths exceed the births—a condition which has already come to pass in many quarters of our large cities—cannot long endure and can be regarded only with misgiving by those who look some distance into the future. A civilization whose most perfect fruit is the modern large city is certainly doomed to early decay.

Much hysterical speculation is rife on the future of cities in view of the hazards of modern warfare. It has even been recommended that whole populations go underground in spite of the fact that biologically man is an air animal. He came up out of the

sea, wallowed in the mud, and now climbs steps into his house. If the best that Price System civilization can do is to bring man to a point where he must go underground to escape his own weapons of destruction, then that civilization must be cockeyed. It would seem that man's only chance of survival is to abandon the cockeyed Price System for a scientific civilization.

Technocracy proposes a design for living on the North American Continent which is in conformity not with conditions and traditions of European and Asiatic countries of the past, but with the physical factors existing in America today. The materials, the technology, the trained personnel and the design are at hand. The only obstacle is a frame of mind, a philosophical hangover from 7,000 years of scarcity conditioning; twilight thinking in a fluorescent age.

It is time, past time, for the American population to change its mind. *Investigate Technocracy!* Then join this mass movement of North Americans. It is the only thing that can solve the problems of 'Big Town, Little Town and Everyman.'

Why Not Export The Poles Too?

'In order to cope with the acute housing shortage in Shanghai, the authorities concerned have placed orders with American and Canadian firms for 10,000 prefabricated houses. More of these homes will be added as the need arises. Some of them have already arrived in Shanghai and will be set up very shortly.' (*Chinese News Service*, April 26, 1946.)

Some years ago a small town newspaper waged a vigorous campaign against the town council. One of its stories was headed: 'Half The Town Council Dishonest.'

The outraged members of the council protested, demanding a retraction. The editor agreed. Next day the gazette carried this headline: 'Half The Town Council Not Dishonest.' (Sgt. Daniel Shreiber in *Reader's Scope*, January 1946.)

'It is assumed as a matter of course that a professional politician will do anything, say anything or endure anything for votes, and that assumption is seldom controverted by plausible evidence.'—Henry L. Mencken, as quoted by the *American Freeman*, April 1946.

13 Is a Lucky Number

We Can Have Slavery!

By Robert O. Black, 12237-1

Did the War Lords of Japan really analyze the United States before their attack? Would the average citizen hit Jack Dempsey? The two questions are parallel. Japan, a nation of less than one hundred million, and poorly mechanized, attacked a nation of one hundred and forty million, which, in addition to its human population, had over thirteen billion mechanical slaves, as efficient as human beings in creating the materials of war. That's where Japan made her major mistake.

The Invisible Army

FIGURE it out for yourself. Right here in these United States (1946), we have a population of 140,000,000 and we have energy not produced by human toil, extraneous energy, of more than a billion kilowatt-hours. This is approximately the energy which thirteen billion humans could produce. A kilowatt-hour is equal to the labor power of 13 men. So, even leaving out atomic energy we are producing enough extraneous energy to supply every man, woman and child in the nation with the labor power of about 100 slaves.

What's your chance for the nobility of toil and sweat with such a set-up? Just what chance have you to compete with this fountain of production? Remember, the surface only has been scratched. More slaves are just around the corner, advancing day by day to crowd us into the background of production. The Columbia River alone, when completely harnessed, can furnish an additional billion electric slaves. The Missouri and St. Lawrence rivers will also be harnessed. There are many other river and power projects too numerous to mention, in the offing. Each and every development

means more production with less human toil, through extraneous energy.

Let us dip into the not too distant future when we will face either chaos and ruin, or the abundance which these slaves make possible now. We do not get this abundance now simply because we, the one hundred and forty million of us, do not control these slaves of ours. The control still exists in the hands of the few, and is used for the betterment of the few, not for the multitude.

We are all Aladdins in our own right. We can go Aladdin one better; we do not even have to rub a lamp. There's just a button to push, or a switch to throw, and a hundred Genii are at our beck and call.

From time immemorial we have been indoctrinated with the idea that 'by the sweat of our brows' we shall earn our bread. It is no longer possible. What chance has the frail flesh and blood human to sell his services, when he bids against a hundred mechanical slaves? They don't get tired, don't get sick, don't eat, don't wear clothing, don't require housing or any of the other necessities that human flesh is heir to. They don't vote. They will work regardless of the Deal—New, Old or Raw. Bigger, better

and faster slaves replace them when they become outmoded. Any one who pump primes his ego with the idea that he can compete with an army such as this is only spitting against the rising wind.

You Can't Work Here Anymore

There are not many jobs left for the one hundred and forty million of us now. But, who wants to work anyhow? Who wants to work when there are so many more agreeable things to do? Do? What will we do, asks Mr. and Mrs. America. Why, we've always worked, or tried to. There is an answer. These slaves of which we write do not think or plan. There will be more of that to do in the future. Probably you've been so busy chiseling your fellow man out of enough on which to exist that you didn't have time to think.

Oh, yes, there are things to be done. There always will be. But, the main job is control and direction of these slaves who are always ready to do your bidding. There's a function for all of us. Thank the powers that be that these slaves cannot be teachers, writers, artists, singers, surgeons, doctors, dentists, scientists, technicians, etc. That's where you and I come in. We can let the slaves take care of the drudgery.

Control them, and abundance, leisure and security is the result. Perhaps two percent of the work will be left for muscles to do, while the slaves will do ninety-eight percent. We will use our heads instead of our muscles. We will have worked less and accomplished more. The net result will be better food, clothing, housing, better this and better that. The entire set-up will be so much better from dawn 'til dark and from dark 'til dawn that it will not be recognizable

as part of the present scheme of life. It will be quite different from today and the days gone by, when 'Freedom of Enterprise?' held full sway. Those were 'the good old days' of freedom to toil when you *had* a job, freedom to indulge in worry and anxiety when you didn't have one, and freedom to scabble along in scarcity and insecurity all the time.

As the slaves come more completely under the control of all and are used for all, there will be more time for play, for the enjoyment of the bounties of this Continent of ours. There will be more time which is the individual's own than ever before, to be used as his fancy dictates. He can hunt, fish, swim, travel, climb the mountains, or do as he pleases with the time which the slaves have made possible. Life will be a fuller life, a more productive and a more livable one. It's all yours, Mr. and Mrs. America, but, to gain it, you must establish a control for the slaves. Even now, they are waiting to do your bidding.

We fought a war some eighty years ago and incidental to it was the abolishment of human slavery. In the short span of years since then, we have accumulated mechanical slaves, who number about seven times the population of the whole earth. So long as our Continent yields its treasures of coal, oil and gas, so long as the rains come down from the heavens, we will enslave more and more. No moral issue is involved, but these hosts of slaves create a social issue. *That issue is control.*

Freedom Is As Freedom Does

All of America has been a spectator to the futility of political control. Palliatives have been heaped on palliatives without end. We have wit-

nessed the destruction of abundance, the workings of the PWA and WPA, the pump-priming during peace, and its continuance through war. We have seen the ineffectiveness of it all when directed against the avalanche which science and technology has brought to our midst. Today, the politicians all over the country are more befuddled than they were in the 1930's. Social control today is in the hands of a few, who assume it belongs to them by some divine right and inheritance. They have gained it as they could. They have chiseled their fellow men and gutted a Continent of its choicest natural resources.

Just as surely as Hitler and his Nazis brought ruin and destruction to Europe, these directors of an outmoded, decadent and dying economic system will drag to chaos and ruin that glory that still remains of America, themselves along with it, if not prevented. We stand at the threshold of a new way of life, the life of Science. No man-made laws can long delay its coming. The extraneous energy slaves are here, billions of them. Each advance in science, every new dam, every newer and better machine hastens the death of an already dying system.

Listen to your radio; read your newspaper. Not an hour in the day goes by but what you will here an appeal, more properly propaganda, for us all to get behind and push, to hold

up this system which cannot stand on its own legs.

The propaganda of the Price System says: 'Look at America, the richest nation on the face of the globe, the highest standard of living, the most this and the most that. Whoopee! Look what my system did!'

And, whisper it, 'is going to do.'

Let's analyze and rationalize a bit. This is not the only spot on earth, where 'Free Enterprise' has held sway throughout the centuries. In varying degrees it encircles the globe. Yet it points with pride to what it has done for America. We are where we are and what we are because of the wealth of our forests and mines, the original fertility of our soil, the power of our rivers, our coal, our oil and the thousand and one other bounties of this Continent which were here to be exploited by Free Enterprise. *We are what we are not because of Free Enterprise but in spite of it.*

Mr. and Mrs. America, you are heirs to the greatest bounty and fullness of life that was ever to be had for the asking. It is yours, rightfully yours. It belongs to the multitude. There is a way to get it, without riot or revolution, but peacefully. It's the American Way—ALL FOR ONE AND ONE FOR ALL.

Why not *Investigate Technocracy Now?* But, don't stop there. Join and do your part to bring about the New America.

Up and Atom

'It has been the use of energy in its various forms—mechanical, chemical, hydraulic, thermal and electrical—which has raised mankind from primitive levels to the high standard of living we already enjoy. Now we see before us a new,

marvelously concentrated form of energy with which we may climb to heights we can only dimly foresee.' (Dr. C. G. Suits, vice-president of General Electric, and director of its research laboratory, as quoted in *Science Digest*, April, 1946.)

A Man's Home Is Whose Castle?

A Dialogue About Playing House

By A. E. Borel, MAL

Mother, May I go out to swim?

Yes, my darling daughter.

Hang your clothes on a hickory limb

But don't go near the water.

Jack: 'Hello, Bill, how is everything going today?'

Bill: 'Oh, fine, Jack. But you know, I've been thinking over that line you were giving me about Total Conscription and so on. It looks to me that you are taking away people's rights in the private ownership of property. You know. If people can't have their own private property, can't own their own homes or cars, why, they just won't have any incentive to work.'

Jack: 'Yes, I admit it, Bill, this idea of owning things, of having your own home, your own car and so on, certainly has a big appeal to it, doesn't it? People are so used to the idea of owning things, I guess it would be pretty hard for them to change their ideas. There are some funny angles about this idea of owning things. You know, Bill, I don't know if you own your own home or not, but the question just occurred to me. I don't want to be personal about the matter, but would you mind telling me, frankly, whether you own your own home or not?'

Bill: 'Well, Jack,' kind of fidgeting around, 'I—I suppose I do own my home, but—ah-ah.'

Jack: 'Never mind, never mind, Bill, let's let it go at that. The point

I want to make isn't whether you own your own home or not, it is merely a question I would like to have every American ask himself, "Do I really own my home?" I just sprung it on you that way to get you thinking.'

Bill: 'I see what you mean, Jack, so I guess I can say, yes, I own my own home.'

Jack: 'O.K., Bill, but please pardon my insistence. For the sake of our argument, I want to repeat that question. I want to stress it just a wee bit stronger, this way—DO you REALLY own your own home?'

Bill: 'Why, yes, Jack, sure I do, sure I own my own home. I got my title to the house and land, I keep up my taxes, I own my home as far as any man can ever own his home.'

Jack: 'Well said, Bill, that's fine. That's just what I wanted to hear you say. That's just what I expected you to say. You own your own home as far as any man can ever own his home. You keep up your taxes. You own your home but you keep up your taxes. Taxes! How long would you have that home, Bill, if you did not keep up your taxes?'

Bill: 'Not very long, I guess, Jack.'

Jack: 'You're right, Bill, **not too** long, at least. It may drag out for awhile, and they will give you lots of chance to pay up your back taxes, but if you don't or can't pay your taxes, they will get you in the end. Am I not right, Bill?'

Bill: 'Yes, I suppose you are right, Jack.'

Jack: 'You know I'm right, Bill. Do you know what I call taxes, Bill? I call them **rent, rent** to the government. They are just as much rent as any other rent you pay, only with a different name. Why, just before I left home, I saw in our little local paper two columns of legal notices, "Property for sale for delinquent taxes."'

Bill: 'That's true, Jack; if you don't pay your taxes, your property is taken from you.'

Jack: 'Here is another instance, Bill. I leased a piece of land from an old fellow ninety-six years old. His mind was as keen as any I have ever met. He had lived on this spot for 54 years. He had been paying taxes all that time. He told me that he had paid enough taxes to buy the place three times over. Right then he was delinquent on taxes. Only the fact that I was paying enough money for leasing the land was he able to pay up his back taxes and "save" his property. Mind you, paying taxes for 54 years, and still the land and home was not his.'

Bill: 'Jack, I never thought of it that way. I always accepted taxes just like everybody else does. A necessary evil. You certainly are right on that point, we never **REALLY** own our own homes, do we? We only own them as

long as we pay taxes. But taxes are needed to run the government. What will you do in place of taxes? What is the answer?'

Jack: 'That question is answered in Technocracy, Bill, but I will discuss taxes with you right soon. Just now I want to try to prove to you that you do not need to have any fears about losing some nebulous rights to this "private property" you think you own. The sad part about this taxation business is the many, many heartaches there have been over the sale of property for delinquent taxes which people "thought" they "owned".'

Bill: 'Yes, Jack, God only knows the number of old couples that have had the roof sold from over their heads, to go to the poorhouse, or wherenot, because they could not pay their taxes.'

Jack: 'Bill, the law is the law. It is no respecter of persons, age, condition or whatnot. There can be no exceptions in the law. But it is not only the home, the land, it is everything. Do you think for one moment that we can actually "own" anything if the Government wants to put a tax on it? Where IS your right to private ownership of property? Take your car. How long would you drive your car if you did not pay the license and other fees?'

Bill: 'Well, I own my own car, Jack, because I could leave it sitting in the garage from now to doomsday if I want to.'

Jack: 'Granted, Bill, but what good is a car sitting out in the garage? Anyway, it isn't that they couldn't slap a tax on it,

if they wanted to, only they don't bother because they got you on the license. I believe some States do have a personal property tax on cars. By the way, Bill, I've just been noticing your dog. Sure a cute dog. What breed is it?

Bill: 'That's my wife's dog, Jack, quite valuable they say. Pomeranian.'

Jack: 'Do you own her, Bill?'

Bill: 'Ha, ha! Sure we own her, Jack. Paid a pretty good price for her, too!'

Jack: 'What's the tag on the collar, Bill?'

Bill: 'Oh, that! That's the dog's license tag, Jack, Five dollars for a bitch.'

Jack: 'Well, what would happen to the dog, Bill, if she got out on the street some day without that tag on?'

Bill: 'Come to think of it, Jack, that is exactly what did happen, and twice, too. The dog slipped out of her collar, one way or another, and without anyone's noticing she skipped out of the house. Did the wife have a fit! The first time wasn't so bad, but the second time the wife and kids hunted up and down the streets for nearly two hours. They were sure scared that the dog-catcher had her by that time.'

Jack: 'What would happen if the dog-catcher did get her, Bill, without that tag on, or, say, you had never bought her one and he picked her up?'

Bill: 'Well, Jack, I suppose, if no one claimed her within a certain time, proving that they had bought the dog license, she would be killed. If you came to claim the dog and had not

bought a license, you would be fined besides having to buy the license. In fact, you can be fined for having a dog without paying the license, and if you don't pay the fine, the dog will be taken and killed.'

Jack: 'Bill, our talk about the dog got your mind off of our original subject. So you neatly fell into my trap. The statements you have just made should prove to you that, actually, we do not "own" anything, no, not even poor little dogs who have to get killed if their poor little masters can't pay the "rent," taxes to you, Bill, on them. I guess many a little shaver has lost his pet that way.'

Bill: 'No, Jack, I don't own the dog, I'm just "renting" her from the government.'

Jack: 'Furthermore, Bill, this is a bold statement, but I make it. We do not, in our own country, have absolute control of our own lives. That is, we must, at the command of the State, place our lives in jeopardy or suffer the consequences. Millions of servicemen, and thousands of conscientious objectors, put behind barbed wire, will testify to that. Mind you, now, I am not arguing, whatever, whether or not this procedure is right or wrong, I am merely stating that it is a fact. And fact it is. You cannot deny it. The draftee steps up, a paper is placed before him on which is printed something to the effect, "do you sign this paper willingly?" and he says, "yes." What else can he do, except go to jail? Therefore, my contention is that what we call our "private property" is not our

private property at all! I claim that we only have title to it and the use of it as long as we pay our taxes, our "rent," to the whole of the people in the form of their government. As long as we do pay this "rent" we can do with "our" property more or less as we wish, but even that right is curtailed, as witness restricted residential districts.

"The most direct and observable example of this fact is the case of the "dust bowl" areas of the plains. The people are beginning to realize that they have a stake in all natural resources. They feel that the abuse of natural resources through the mistaken notion that each individual can do exactly as he wishes with what he "owns" and "to Hell" with the rest of the people can no longer be endured. When the people who first settled those areas took possession, it was assumed that the land they occupied was theirs, to use as they wished. No forewarning was given as to the disastrous results of their unthinking and unscientific use of the land. Since then, many an editorial has been written by the strongest proponents of the Right of private ownership of property principle, acknowledging that, in the final analysis, the land *does* belong to all the people; that when the land has been destroyed through misuse and mis-handling, it is not alone a loss to the individual who "owned" the land but it is a definite loss to all the people; that the individual IS accountable to society as to his stewardship of the land. It shows that the

people are beginning to realize, though still in a hazy way, that the farmer does not own the farm but is the lessee of the people.

'Farmers will be the last to give up their belief in their so-called "rights" to the land. Farmers love the land as no one else does. But the number of farms lost each year through taxation, or mortgages taken out to pay taxes, should surely convince them that they, also, are believers in a shadow of "property rights," but do not have the substance. They should broaden their vision and, instead of being afraid of losing "ownership" in a few measly acres, they actually can be part owners of the whole North American Continent.

Bill: 'That is an idea, Jack. Instead of owning one little home here, and one little old car, I can be part owner of all the homes and all the cars in the country.'

Jack: 'That's right, Bill. By adopting Technocracy you can have the resources of the whole North American Continent at your command. So why worry about "losing the "rights" to one little house! I think you realize now what I have been driving at, that, actually all of the natural resources of this wonderfully great, big country of ours are owned by ALL of the people. We admit it, we acknowledge it on every hand, but we cannot seem to take that last hurdle and actually take possession. Through our laws, created by our lawmakers who are supposed to be the Voice of the People, the big majority of us are being continually talked into believing

in a principle which, in theory, advocates the "right of private ownership of property" for all, but actually, in truth, limits the benefits of this principle to a few through taxation. We are continually told that it is right and proper, and so meant by Heaven, itself, that a few should be able to make themselves rich through this "right to private ownership of property" in the guise that we could all do so if we only had the ability! In other words, if we don't get rich, it is our own fault, the door to "Private Property" stands WIDE OPEN!

Bill: 'But why can't I get rich under a private property system, Jack?'

Jack: 'Well, Bill, do you not see that in believing in what is supposed to be a fair and straightforward principle of private property, you have been led and encouraged to believe in a mockery of this principle? Oh, all unconsciously, of course, because no one has stopped to investigate this theory of taxation or rental from the government. For, after all, only the few have sufficient money to pay the taxes required. Therefore, though in principle you are supposed to be allowed to own whatever you can acquire, in practice it does not work out that way. You can only own what you can pay taxes for. And, because you do **not have much money** to pay many taxes, you certainly are very limited in what you can own. In the meanwhile, under our mistaken faith in this "rights of private ownership of property" principle, the cream of our natural resources is being drained off for

the private benefit of the few who are able to pay these taxes. They, in turn, frame the laws in such a manner that they do not even have to pay the miserable taxes demanded. I could cite you many a case along this line.'

Bill: 'Speaking about skipping taxes, Jack, I guess you know plenty about the timber barons who strip the land of its timber and then turn the worthless land back to the counties for taxes. They've gotten the cream; now the people can have it again.'

Jack: 'Yes, that is true, Bill, that is the way it goes. So you see, under the Price System, the people are supposed to have private property but do not actually have it, because I have proved that nobody has that, nobody! Whereas, in a Technocracy, the very people who are now being told that they would, in a Technocracy, lose all they have because they would be losing their "rights to private ownership," these same people would be coming back into their own. All of the people would be taking over all the benefits from all our natural resources—and these include the fruits of our minds—instead of farming them out to a few. We would simply be regaining all those rights which we have lost for awhile.'

Bill: 'Yes, Jack, I see it now, you have proved, and we do acknowledge it, that everything does belong to the entire public, because the public has, through its Government, reserved to itself, collectively, the right to tax. This is not a moral question, it is a fact. No one, therefore, should be allowed to use

what belongs to all the people for his own private gain. These benefits should be distributed equitably to all the people for the good of all. Is that right, Jack?"

Jack: 'Yes, that is right, Bill. But the trouble is, you cannot carry out this fine scheme under our present political and economic set-up. You cannot distribute the benefits of our natural resources to all of the people under a Price System. It just cannot be done. Only the method developed by 'Technocracy' can do it. So, "not owning" a home or a car or a farm in a Technocracy, but paying a "rental" to the State for the use of these things is no whit different from "owning" a home or a car or a farm under our present system and paying "taxes" to the government or losing them. Can

you show me any difference, Bill?"

Bill: 'No, I can't Jack. As soon as people get this slant on taxation, they will certainly go for Technocracy.'

Jack: 'I hope so, Bill. But a word about raising taxes. A government does not produce, of course. Some people seem to think so when they talk about paying off the Government debt. A government is supported by the governed. Technocracy's method of distribution takes care of that. It is service *from* all, a high standard of living for all, but profits to none. To understand this more fully, you will want to Investigate Technocracy and then join the only movement in America capable of promoting the General Welfare of ALL.

Humpty Dumpty Sat on a Wall

'The boldest spirits among the mechanists further claim that in time they hope to bring within reach of their methods a study of the lucubrations, hallucinations, and obsessions of the human mind which, masquerading under the illumination of introspective metaphysics and transcendental philosophy, pretend to solve all the riddles of the universe.'—Professor T. H. Morgan (1886-1945), famous American Zoologist and winner of the Nobel Prize in medicine in 1933, in his book *Scientific Basis of Evolution*.

'Men are born ignorant, not stupid; they are made stupid by education.'—Claude Adrien Helvetius, a French philosopher (1715-1771).

'People are not "dumb" because they lack mental equipment; they are dumb

because they lack an adequate method for use of that equipment. Those intellectuals whose pastime it is to sit on high fences and deplore the innate stupidity of the herd are on a very shaky fence, if they but knew it. Often they are more confused than the man in the street, for they deal in loftier abstractions.'—Stuart Chase.

'There are two modes of investigation, through argument and through experiment. Argument does not suffice but experience does.'—Roger Bacon 1214-1294.

'Not to take authority when I can have facts; not to guess when I can know.'—Oliver Wendell Holmes (as quoted in *Yankee from Olympus* by Catherine Drinker Bowen).

Blueprint for Free Enterprise

ONCE I WENT TO A LECTURE

By Archie Sinclair, 12245-1, and the Peripatetic Technocrat

'Wherefore art Thou, Romeo?'

It seems that scarcity is as necessary to the operation of the Price System as coffee is to 'sinkers,' or Romeo was to Juliet. Certainly, the New Deal during the palmy days of the late depression ordered the curtailment of crops, the destruction of foodstuffs, and directed cattle, pigs and sheep to practice birth control. Is it possible that this had nothing to do with the operating rules of the Price System? Perhaps these good men and true, the brain trusters, thought that scarcity, with its bedfellows, poverty, malnutrition, crime and 'sweet charity,' was good for our immortal souls. One never knows what politicians and economists think, or even whether or not they do, does one?

When the Alcan Highway was being built and after construction work on this project had ceased, tons of material were destroyed because abundance was putting sand in the gears of the holy Price System. We will never know how much material was scrapped during, and after, World War 2. Automobiles, fighter planes, bombers, trucks, jeeps, radios and the like, laughingly called durable goods, were dumped or held in storage to create scarcity. It is not proper to disturb the 'take' of free enterprise. Thus speaketh N.A.M. Last winter, came the cheerful news from Washington that millions of hens had to be killed to keep up the price of eggs. What did the poor hens ever do to deserve a premature fate? Answer: They violated the basic law of free enterprise, i.e., produced too much. Yes, we may

safely say that scarcity is necessary to the maintenance of the Price System.

If we must have the prosperity of free enterprise scarcity, we should like to submit the following plan, not as a solution, but simply as a sort of stop-gap until the Senate and Congress get around to solving the problem, say about 2057 A.D. Here, in a nutshell, is our blueprint for free enterprise.

Why not take all our works of art, paintings by old Masters, statues, zoological specimens, Egyptian mummies, literary classics, and the like, and destroy them? Or, better still, why not have our hard working thieves steal them? Think what a boost that would be to free enterprise. Let us illustrate some of the marvelous results that will come out of our plan.

It's Fun To Play Footie

This plan would give employment to thousands of artists, both real and fake. The fakers have to eat too. Archaeologists and zoologists would have more projects on hand than they could manage. Egyptologists could rummage around the tombs of the Pharaohs until the cows came home bringing cream with them, so that we could have butter again. Our thieves would be so busy robbing art galleries and museums as not to have to bother with banks. The police of all the cities of this land of the free (enterprise) could use lots more help. With all the Irish in soft spots, we might even get a few Swedes on our police forces for a change.

Just think, lawyers and judges

could have lots of cases and fat fees. This would relieve them of chasing ambulances or working for railroads on the side. Journalists would not have to face the spectre of useful work. They could concoct new columns of heart throbbing, human interest stories. There are formulas for it.

Man bites dog is news. Boy meets girl; boy loses girl; boy gets girl back is love. Murder will out is mystery. Crime does not pay is virtue. Every Cinderella has her Prince. Then there's always dear old 'Mom.' She waits patiently besides the lighted windows for her wandering boy to return home. Crowned in the glory of 'silver threads among the gold' she waits, whilst the candlelight gleams softly through the sycamores and her Johnny is tiptoeing with the Daisies in some joint down by the river. This theme has a number of variations.

Our plan would be a great boon to editors too. When the proper stage of organized confusion is reached, they can fume forth with new indignations about the State of the Nation; the Brotherhood of Man; the fatherhood of free enterprise; the desecration of art, the laxity of police officials, the tie-up between crime and politics, ad infinitum, 'add stinkum.' News kids could become bloated plutocrats from peddling bloated stacks of bloated news?papers. At least they'd get bloated from yelling 'Wuxtry.' Yes, our free press is a wonderful institution.

Smooth politicians, quick to sense the new spirit of the times, could slide into the public trough as slick and easy as a peeled log going down a 'skidway.' Reform tickets would be all the rage. The 'outs' could indict the 'ins' with a straight face. While the 'ins' could 'point with pride' to their record while praying that nobody will ever really uncover it. Every

'right thinker' in the land could 'view with alarm' the state of public morals. His majesty, the great American voter, would be in paradise. He could make X marks on ballots till he got blue around the gills. A standard scale of \$2.00 or more per ballot would assist the distribution of purchasing power immensely.

Instead of building more poor-houses, we could build bigger and better insane asylums and jails. These are more profitable to build and maintain than poorhouses. There is more 'take' all around what with slave labor contracts, rakeoffs by parole boards, etc. Not to be sneezed at is the fact that, if we build enough nut houses and jails and lock up enough crackpots and crooks who are dumb enough to get caught, it might even solve our mass, low-cost housing problem. There's no dough in that line anyway. After all, we should let every pressure group in the land get its crack at John Q. Citizen before turning him over to the tender mercies of 'sweet charity.' This is of the essence of free enterprise. It's not proper to interfere with 'ragged individualism,' at least not until it has become ragged. Thus, also, speaketh N.A.M.

'She'll Be Driving Four White Horses When She Comes'

When this new day dawns, movie hacks and radio 'slap happies' will acquire a new repertoire of plots and jokes. At first these won't stink quite as bad as the ones peddled now. Soap operas, murder mysteries and nine-star cinemaniac spectacles will be elevated to new heights of Price System gibber by slanting to up-to-the-minute 'angles.' A vast new artistic and literary expansion will follow resulting in untold blessings to the imported natives of Carmel-by-the-sea, Hollywood and good old Broadway.

Just think of all the books that could be written about our resuscitated culture; and all the new peppy four-color magazines that could be piled up on top of the ones on the newstands now. This would be an enormous boost to the printing and publishing industry. And say, what about that basic industry of free enterprise, advertising? It might very easily expand so terrifically as to advertise the entire Price System into a new rose-colored age of permanent prosperity.

Then there's the Chautauqua and public lecture circuit. Think of all the long-winded talks which could be given on social problems at \$2.00 per head, including Federal tax. Every viewpoint could be represented, liberal, reactionary and asinine. Yes, sir, free enterprise believes firmly in free speech for all. It's in the constitution, ain't it? The only guys we clamp down on are those 'ignorant foreigners' or 'reds,' and those misguided native sons-of-blockheads who insist on dragging up nasty facts. They don't know which side their bread is buttered on anyway.

Even St. Peter away up there by the Pearly Gate, nodding in his bushy beard and bewailing the paucity of new membership applications to Heaven, would be immensely heartened. For, has it not been written by Plato that Socrates once said: 'The soul takes nothing with her to the other world but her education and culture.' In view of this it is simple to visualize the tremendous accretion that will be added to the river of the just and righteous that is eternally spiralling upward to its reward. We mean, after our plan goes into effect, for, boy, what a culture it will bring. Say, come to think of it, won't hell be an interesting place when all the free enterprisers are safely behind the ramparts of heaven. That's an idea.

The best part of this little plan,

however, is the fact that it would harm no one nor deprive anyone of the right to life, liberty or the pursuit of happiness. In fact, people could chase happiness harder than ever. Certainly, it could not hurt the creators of our works of art. They are dead; so are the mummies; so is free enterprise but it insists on stinking up the premises. We would not be depriving any one of food or other necessities. The cost of living would drop, wages and employment would rise. Small town and big town would boom, and John Farmer would bust with prosperity. In toto, our plan would bring about the Renaissance of 'Normalcy' for good old free enterprise. We offer it to the people of the U. S. freely, as the Scotchman gave his sister the measles.

If this typical free enterprise program doesn't 'send' you, it is plain that you are not a true blue, red-blooded, 102 percent American. In that case you must be one of those 'ignorant foreigners' or 'reds' we're always hearing about.

No loyal son of our founding fathers would ever betray the cardinal principles of free enterprise. One of the biggest ones is that the broad highway leading from log cabin to White House must be kept open for every chiseling Son of a beggar or big shot in the land. What if the road does lead through an occasional oil field, a smoke-filled hotel room, or the basement of a convention hall. This principle is the top glory of free enterprise. Now that we have completed the presentation of our plan, we will proceed to the next phase of the program.

The Meeting Will Please Come To Order

Now that we've presented our plan for the resuscitation of the prosperity of free enterprise, our lecture is over

and some questions are in order. What do you think of the plan? Who has a better one? One at a time, please, and be sure to confine your questions to the subject.

Almost before the speaker had finished, a cool-looking individual, who appeared to be hot under the collar at the moment, popped to his feet. He was dressed in a Gray Suit and wore a strange looking pin in his coat lapel. It resembled two tear drops in a red and silver field. 'Mr. Speaker,' he shouted, 'I'm disgusted. This whole plan is specious. It won't solve any social problems. Now—'

The speaker fired right back. 'That's enough; you're out of order. No speeches allowed. It's a specious argument, you say? It won't solve any social problems, eh? Well, who said anything about solving social problems. We told you in the beginning that this plan was not a solution but only a stop-gap until Congress gets around to solving the problem, say about 2057 A.D. You heard that, didn't you?'

'Yes,' admitted Gray Suit, 'but your plan sounds exactly like—'

'I said no speeches, please,' interrupted the speaker. 'My plan sounds exactly like what? Never mind, here's a gentleman who has a legitimate question. What is it, Sir?' The second questioner was an elderly gent. He said: 'Well, Mr. Speaker, it's this. Your plan sounds to me like a proposal to base our entire social system on rackets and crime. How do you answer that?'

Before the speaker could reply, Gray Suit was on his feet again. He was definitely hot under the collar by now. He shouted: 'That's the point I was trying to bring out. Your plan is just exactly the same as what—'. The speaker drowned out the rest of

Gray Suit's words with a banging gavel. He thundered: 'Listen, brother, this is not an open forum. You're out of order. If you don't quit trying to break up this meeting, I'll have you thrown out.'

Gray Suit sank back into his seat, red-faced, and muttering. Another hand went up and the speaker turned. It was a young woman, well dressed (strangely, also, in Gray) and keen looking. The speaker beamed: 'Yes, lady, it's a pleasure; what is your question?'

'Well,' she replied, 'Mr. Speaker, I've followed your train of thought closely and I can't see any difference between what you propose and what has actually been done in the last 20 odd years. How do you answer that?' As she leaned forward, a furpiece around her shoulders slipped to one side, revealing another of those strange, teardrop pins. The speaker hemmed once and was getting all set for a couple of haws, but he never got around to answering. Gray Suit was out in the middle aisle, demanding the floor and roaring:

'Listen, everybody! I don't give a damn if they do throw me out. I demand to be heard. When the speaker announced the question period, he invited anyone who has a better plan to bring it up. You all heard that. Now, do I get the floor or not?' He looked confidently around, well knowing that the great American public has a soft spot in its heart for every David battling his Goliath. Cries of approval rose from the crowd. 'Let's hear what Gray Suit has to say. We listened to the other guy, didn't we? Go on, fellow, speak your piece.'

Gray Suit jumped up on the platform and saluted twice, once to the audience and once to the lady with the furpiece around her shoulders. He

was no longer hot under the collar but cool and collected.

*'If In The Blackest Hell
There Be a Blacker'*

'This plan for the revival of free enterprise boils down to only one thing. That is, just more and more of the same old hogwash we've been getting for 20 odd years. Free enterprise means just one thing. That is, the freedom for a minority pressure group to rape the General Welfare. It means the freedom to maintain artificial scarcity, poverty, malnutrition, poor public health, in spite of all the known methods for abolishing them. It means the freedom to waste our irreplaceable natural resources. It means the freedom to destroy the prospects of ourselves and future generations for a more abundant life.

'It means the freedom to distribute purchasing power by means of rackets, crime and black markets. It means the freedom to condemn millions of citizens to low living standards, to confine them in filthy, high-rent slums, and to sabotage all proposals for mass, low-cost housing. It means the freedom of a prostitute press to serve the vested interests.

'It means the slippery, two-timing politician who sells himself to every pressure group. It means the futility of voting one gang of crooks out and another gang in. It means jails, poor-houses and insane asylums for millions who cannot adjust themselves to the insanities of a free enterprise system.

'It means the moronic movies; the advertising controlled radio; the politician controlled school; and the oily ecclesiastic, who after being entrusted to interpret the faith of his parishioners in a super-human power which is placeless and timeless, then betrays

that faith and perverts it into clerical interference in government and education. "Render unto Caesar the things that are Caesar's and unto God the things that are God's."

'This whole plan, presented here tonight, is 100 percent anti-social. The real meaning in free enterprise can be boiled down to one sentence. It is the arrogated privilege of the select minority to prosper at the expense of the natural resources and people of America, and to forestall social change by propagating mass social ignorance and superstition.

X Is The Unknown Quantity

'It is high time the great American people began to examine the life of their social system under the bright light of facts. This idiotic, rainbow-chasing Price System is doomed. It has been weighed in the balance and found wanting. With all the resources, knowledge and tools at hand to correct our collective social ills, it stumbles along from one tragedy into the next. The advances of Science and Technology have written out the death warrant of Price, Trade, Commerce, Monetary valuation, Exchange, and Free Enterprise in America. This fact is the unknown quantity in our modern social life. It will wreck our entire civilization unless we bring it under control before it's too late.

'The real, social meaning of science and technology has been sedulously concealed from the people of America. It has been covered with a conspiracy of silence by the "don't give a damn for anybody but myself," free enterprisers; by the lickspittle tycoons of the Fourth Estate; by the Caspar Milquetoasts of Education; by the political leeches in our Halls of

Legislation; and by those clerical termites of Churchianity who are betraying the blood that spilled on Calvary for the son of man.

'Science has a social meaning. It is rich and full of promise. Within the context of science and technology are the tools for building into reality all the hopeless dreams and longings that have plagued and baffled men for generations. Science says to all, young and old:

I have the answer to your problems. I know how to abolish poverty, ignorance, disease, insecurity and war from among you. I offer you not just four abstract freedoms but many real things you never had before. I have the key to abundance, security, distribution, individual and social integrity and lasting peace. I am a friend of man. Why do you not let me in? The hour is getting late for you. The social unbalance of your Price System increases daily. It is dangerously close to the point of social intolerance. Better think it over. If you want any references, just study my past record of performance. It constitutes a certified promise that I can do the job.

Gray Suit leaned forward. An intense sparkle was in his eyes. His voice was almost husky. The audience sensed his emotion and the power of the facts put forth. It was so quiet in the hall, you could hear the 'El' train rumbling by, over two blocks away.

Once I Went To A Lecture

Gray Suit paused a second, then continued: 'The social aspect of science and technology has been collected

and coordinated into a new body of thought. It is known as Technocracy. It is a new branch of science. As such it has had to struggle for recognition. Because Technocracy deals with the social aspect of Science and is not purely technical, the Price System has been unable to exploit it for profit. Because the findings of Technocracy run counter to the vested interests of free enterprise, it has met with a conspiracy of silence. Because Technocracy will not distort facts, will not compromise with facts or sell itself to the God of things as they are, it has been slandered, smeared and lied about.

'That is why most of you may not have heard about Technocracy, and perhaps some of you who have heard have gotten the wrong impression. It was given to you that way by some stool pigeon of the status quo, busy grinding axes for the Price System. Technocracy has no axe to grind, not even one of its own. It is dedicated to North America and ALL its people as one. Since Technocracy is the social aspect of Science, you might call it the Science of Society. To put it another way, you might say that Technocracy is the science of how to apply science to the social system.

'Technocracy is the better plan that is available to us now. When this inverted pyramid of society called the Price System topples over, we will have to have a designed social structure to replace it. The answer is Technocracy. The schematic design is ready. It defies scientific dispute. We can't argue with facts. But, we can cooperate with them. The ancient Price System is almost washed up. Technocracy brings good news to all Americans. It has something far better.

'Now, the hour is getting late.

Neither this speaker, nor any other, could possibly tell you all about Technocracy in a few minutes. The subject is tremendous and it's tremendously important that we understand at least the major points involved. Therefore, Technocracy again puts forth its standing offer and challenge to all Americans to Investigate Technocracy. It is wide open for that purpose at all times.

'Technocracy is your friend. It

will be our only out when the Price System collapses. It will be America's only salvation from social chaos or, what is worse, the living death of social fascism.

'I thank you for this opportunity to clear up a few points and ask you again: Investigate Technocracy, join the Organization, and assist in building the New America of Security and Abundance for all citizens.'

Thank you and good night. .

From Here on Out

Keep Your Eye On The Trends

by R. F. Novalis

Increasing Trends..

All-Time
LOW

Latest HIGH
Figures*

1. DEBT (U. S. Govt.) per person.....	January 1, 1840 \$0.21	2,000 Dollars
2. ENFORCED LEISURE (unemployment).....	October 1944—630,000	2,470,000 People
3. MACHINE TOOLS in use** (cumulative total).....	1925.....700,000	1,811,500 Machines
4. BANK LIQUIDITY (percent deposits to reserves, Federal Reserve Banks).....	1921.....60.0%	98%
5. GOVT. (U. S.) BONDS to total bank invest- ments (Federal Reserve Banks).....	1929.....39.0%	93 1/2 %
6. GOVT. (U. S.) BONDS to total life insurance investments	1915......0005%	65%

Decreasing Trends

All-Time
HIGH

Latest LOW
Figures*

1. PRODUCTION (combined factory-mine-railroad freight) Index basis 1919-20 monthly aver- ages equal 100	Oct.-Nov. 1943—250	180.
2. MAN-HOURS WORKED (total of man-hours in factory-mine-railroad) (Note: 1919-20 month- ly average was 2.54 billion) Actual number.....	Oct.-Nov. 1943 3.14 billion	2.41 billion
3. MAN-HOURS PER UNIT in above industries, combined average	1919-20 = 100	41%
4. ENFORCED SCARCITY (load factor on installed capacity of above industries)	No Figures	22%
5. INTEREST RATES (combined average yield on Govt.-municipal-corporate bonds)	1919-20 6.12%	1.76%
6. OSCILLATION DOWNWARD of factory output since all-time peak (Oct.-Nov. 1943).....		36%

* January-February, 1946, Two-month Average.

** No figures available on number of machine tools scrapped

Ed. Note: See January-February "Great Lakes Technocrat" for detailed explanation of this table

From the Camera's Eyeview

Progress of the Price System

The Code of Hammurabi, promulgated about 4,000 years ago, states: 'If a builder has built a house for a man and his work is not strong, and if the house he has built falls in and kills the householder, that builder shall be slain.' That was the building law in the most advanced nation of the Price System 4,000 years ago. It set up a performance standard designed to protect the public against dangerous and unscrupulous building practices. That aim is still, ostensibly, the underlying principle of building laws. But, we have made a lot of progress since then. In the most advanced nation of the Price System today, free-born Americans are subject to the provisions of over 2,000 different building laws. Many of these are so complicated that it takes a battery of architects and politicians to interpret them. Chicago's Building Code, for instance, runs to almost 600 pages. The Model Code of the National Board of Fire Underwriters totals over 80,000 words.

Of course, society is technically more complicated than it was 4,000 years ago. But, one major factor remains the same. We exist now under the same basic type of Price System as prevailed then. The difference is that today it masquerades under the phony slogan of 'Free Enterprise.' Under this protecting canopy the underlying principle of building laws has been sabotaged. Most of these laws today are not concerned simply with preventing dangerous and unscrupulous building practices. 'Something new has been added.' They are now drawn primarily to protect the vested interests of builders, material suppliers, real estate interests, landlords and organized (handicraft) labor. The householder is fair game for all. This minority control over housing is the reason why most Americans live in 'dog houses' and also the basic cause of the present housing shortage.

The political machination by which this 'progress' was achieved is as follows. The Code of Hammurabi was essentially a simple 'performance code.' It stated in terms of function what a structure was supposed, or not supposed, to do and left the way clear for new methods and materials. The free enterprise codes of free America are essentially 'specifications codes.' They state in terms of materials the specifications that must be complied with. By placing specifications standards ahead of performance standards, the free enterprisers have closed the door on new methods and materials. Thus the status quo is frozen for the benefit of a minority group. This social sabotage has delayed the impact of Technology in the housing field. It won't be that way much longer. Technology is hard at work. Let's look at a few examples. Then, we can continue our story on Page 33.



Photo: Illinois State Housing Board

Four persons were buried alive when this Chicago house collapsed on the night of July 3, 1944. Timber decay was blamed. That was effect. The decaying Price System was the cause. The State Board says: 'The property in the above picture produced a net profit of 17 percent of the owner's investment. This fact is reason enough why slum housing persists.' Who could say it any better?



Photo: Thermoid Company

There are enough men on this job to hint that the materials may have been specified by an obsolete building code. But, Technology is there too, performing to standards. It's a portable, endless belt, brick conveyor that displaces hod carriers. Technology dictates less work for more production and distribution. This sounds inconsistent but it's a fact. Any Technocrat can prove it.

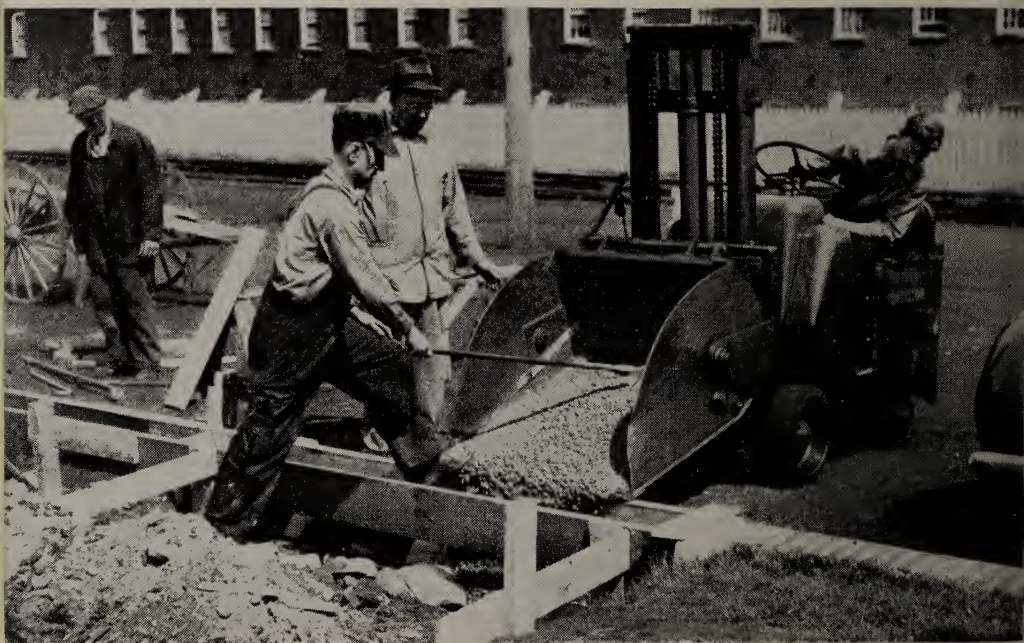


Photo: Towmotor Corporation

Engineer Joseph Howard at Boott Mills, Lowell, Mass. devised a scoop attachment for a Towmotor and added it to his maintenance crew. This reduced crew from 9 men to 3, and improved efficiency. Device hauls coal from bunkers to boilers, ashes from pits to trucks, concrete from mixer to forms. Technology knows how to perform. Politics and Price know only how to specify interferences.



Photo: R. G. LeTourneau Inc.

Technology invades the housing field. Here's the Tournalayer, a machine that casts in one piece the basic structure of a 4-room, reinforced, concrete house complete with outside walls, roof, eaves, window and door frames, inside center partition, electrical wiring, outlet boxes. Here, outside form is being lowered around the inside form. Both forms are set in position on a base.



Photo: R. G. LeTourneau Inc.

The forms are assembled ready for concrete to be poured in the 5' space between them. Window and door frames, conduits, outlet boxes and reinforcing steel mesh are attached lightly to inside form. When mixture is set the inner form is contracted by means of levers away from the concrete, thus leaving basic structure attached to outer form with above items embedded in proper position.



Photo: R. G. LeTourneau Inc.

The Tournamixer ejects concrete mix up to an elevation of 16'. Material is worked closely around window and door frames. Then the roof is poured on. Flat roof slopes to a center sump with a single drain buried in the concrete. After pouring the molds are allowed to set until concrete hardens. One machine and mixer can service a dozen sets of molds. Forms can be used many times.



Photo: R. G. LeTourneau Inc.

The Tournalayer picks up outside form and house to deliver and set down in permanent location. The pick-up trailer is equipped with three point suspension electric hoists for leveling and a main hoist for lifting. The entire empty assembly including base can be picked up and hauled to any location and is ready for pouring the instant it arrives. It needs a wide, level roadway.

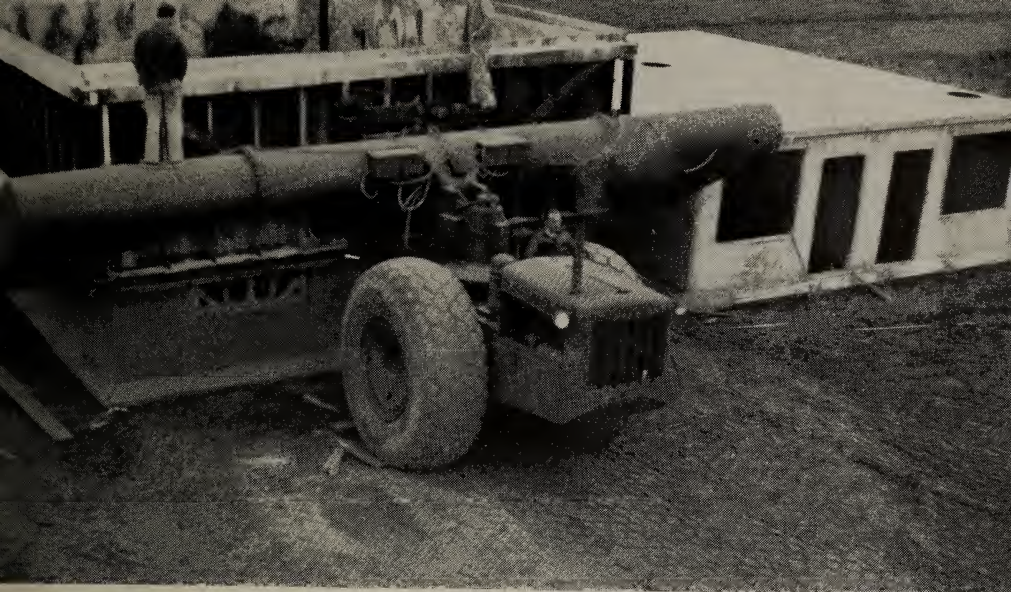


Photo: R. G. LeTourneau Inc.

After being set down on its foundation the outer form is expanded away from the house, hoisted clear and hauled away. Tournalayer's job is done now and house is ready for finishing. A local contractor takes over at this point to install floors, plumbing outlets, additional partitions, etc. Tournalayer now returns with outer form to central operating point for the next pour.



Photo: R. G. LeTourneau Inc.

Here is a Tournalaid House. It's 32'8" long, 24' wide and 10' high. Price of basic house with choice of window styles is about \$1500. This includes doors and windows installed, waterproofing on outside, painting on inside. Houses are permanent, easy to maintain and heat. This is first model. Houses with basements and second story are being worked out. A Salute to this Technology!



Photo: The Ingalls Iron Works Company

However, the bulk of Americans will not be housed in individual units in the Technate. The material and energy cost of housing 1,000 families in a large residential unit is much lower than for 1,000 separate units. A house performs a vital social function. This can be fulfilled much better in large units. There are also dozens of special advantages from the individualistic viewpoint.



Photo: Pennsylvania Central Airlines Corp.

In handicraft-agrarian days we could properly discuss the 'what' and 'how' of social problems. They were simple then. Today they are complex. The 'what' can be measured and the 'how' is technical. This limits discussion to overall 'whats'. For instance, what do we want, abundance or scarcity, equal opportunity or special privileges? Getting what we want is an engineering job. Catch on?



Photo: Burroughs Adding Machine Co.

Here is a battery of High Speed Bank Bookkeeping Machines. It's Technology applied to finance. There's no discussion here. Figures tell the story. That which can be determined as a matter of fact is not a fit subject for discussion or opinions. Carry this idea into effect on our major social problem and the correct solution will come out, but quick. This is a fact, brother.

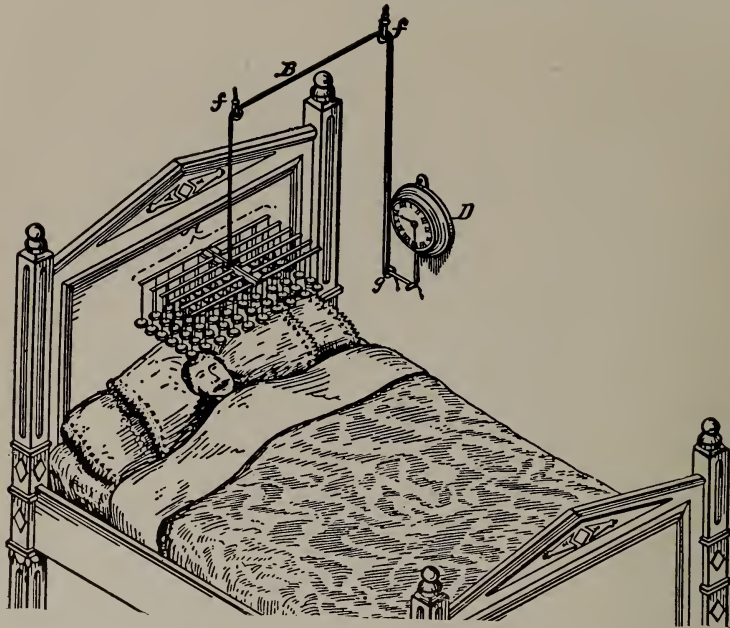


Photo: Felt and Tarrant Manufacturing Co.

U. S. Patent No. 286,265, granted 1882 is a goofy device to wake up a sleeper. It's no crazier than the American people's 1882, dreaming attitude in the Power Age of today, that if we just let things ride they will work out somehow. They won't! Technology has set a time limit on the life of the Price System. Better wake up before the facts wake us up the hard way. Let's quit dreaming.

We All Live In The Same House

(Continued from Page 25)

A dwelling house is a machine for living. In the words of the U. S. Housing Authority, all of a family's 'functions, biological, social and administrative, center in the home—eating, sleeping, procreation, child nurture. It's health, comfort, social and civic life, in short its degree of civilization, depend on qualities inherent in the structural plant which forms its shelter.' A house, then, is an operating social mechanism. It consumes materials and energy and turns out products. Its function is to meet the performance standards inherent in its important social role.

We have seen how Technology is doing its best, under the Price System, to solve the housing problem. However, the Price System is doing its best to prevent the housing problem from being solved. In fact, the Price System is designed to produce social problems and prevent their solution. To confirm this it is only necessary to observe its set-up and operations. It is a form of social organization, arranged to maintain and exploit scarcity. It is equipped with the necessary politico-economic operating rules to make this possible and to permit a minority to fatten on this condition. Thus, social problems are produced. Solutions must be avoided at all costs, else the rackets come to an end. The housing problem is only one of a host such as health, education, food, crime, juvenile, race war, accident, waste, divorce, etc. problems which are flourishing abundantly. The only way the Price System could solve these problems would be for it to first, abandon its major function of exploiting scarcity and turn to producing abundance, security and equal opportunity for all. This job is contrary to Price System design. But, Technology can do it in North America. In fact, the schematic design of a better social system is ready now.

The North American Continent is equipped with all the machinery, materials, energy, personnel and know-how to install such a system now. Yet, upon this magnificent foundation the Price System has erected the shoddy house we all live in. In this unstable social mechanism, we lead our paltry lives from birth to death. The Continent offers us abundance, peace and security. The Price System whittles this down to scarcity, war and insecurity.

Today, our house is in a ramshackle condition approaching the collapse point. Before it caves in around us, let's hunt up the builder and get even. It's easy. Just go and look in the mirror. There he is, the most effective interference control of all, a microcosmic reflection of the ancient Price System. It's high time we got our collective heads together. Let's repeal the interference specifications and set up adequate performance standards.

There is only one social movement in North America equipped to explain this problem correctly. That is Technocracy Inc. If you want to live in a better house, join Technocracy, investigate the facts and learn what must be done. It's our house, isn't it? It's our Continent, isn't it? Well? What are you going to do about it?

JOIN TECHNOCRACY!

Primer of Technocracy

How The Better Half Looks At It

By Ethna Hackett, 7340-1

Keeper Of The Fire

WE ARE here and can stay alive on this earth only because of the Sun. Everything that moves, breathes or has its being in the earth, under the earth or in the sea lives through the energy derived from the Sun. Coal started hundreds of millions of years ago through the energy derived from the Sun. The trees fell and the earth absorbed them. Finally, some one discovered them in the form of coal, still holding the energy from the Sun. What makes our fires burn so brightly? It's the Sun's energy in coal. All plant and animal life, including man, gets life from the Sun's energy. We convert that energy into use forms of all devices and designs. That is how we are enabled to live on this earth.

How do all these use forms, called goods and services, reach human beings? Through a System, a social system, set up by them. By that we mean the organized forms of society under which people have lived in the past, and now. The original reason for the formation of social systems was to produce and *distribute* goods and services. That is the fundamental purpose, or function, of a social system. The larcenous concept of value, exchange and profit crept in later.

The fish in the sea, the wild animals that roam the forests and the birds of the air have not organized their life into the type of social system we know. Nature provides for them. The energy from the Sun produces food for them to eat and water in rivers and lakes for them to drink.

But people, everywhere, are organized under and subject to the rules of social systems. From the date of the earliest records known there has been only one general type of social system. It is called a Price System. That is what we have in North America today. A Price System works by men doing something to earn or obtain pieces of paper, called, in this country, dollar bills, or pieces of metal called gold or silver. According to how much one can collect one way or the other of this paper or metal, one can obtain the things produced. In the past, some earned it by producing, others by selling what was produced for a Price higher than that paid to the producers. These were called the clever ones, who could get others to work for them and thus obtain large amounts of this gold, silver or paper.

All this worked for a long, long time, so long that men have grown to feel there is no other way out ever in this world. Some must work, some suffer, and some, a very few, can own and enjoy. In this ancient set-up of the Price System, women as a group have occupied (and still do) the most inferior position in the social structure. Men were, and still are, dependent on their wages and salaries. Women were, and still are, dependent on their men. As the economic chattels of men, women have been, and still are, the slaves of slaves. This fact has always been glossed over in song and story. However, it still remains a fact.

During the last hundred years or so, and much more during the last twenty-five years, a change came in

to upset this old Price System. Man had always borne the burden of producing along with domestic animals, windmills and a few hand tools to help out; muscular energy did almost all the producing.

Lately, however, what are called 'labor-saving devices' became known, machines which would lift the burden from man. A new source of energy, called extraneous energy, derived from coal, gas, oil and electricity, came into use. Coal produced heat; heat produced steam; and steam pushed its way through and turned a turbine. For the first time, work was being done without man. Today, it's almost like a fairy story. The machine can dig coal out of the mines, it can plant vegetables, pick cotton, make glass, etc. We do not need men to produce with muscular energy. Machines can make shoes and endless other things. How wonderful for man! At last he was freed from work and toil! The machines never get tired, they can produce more than man ever dreamed could be produced, and thus give man health, comfort and a chance to learn how to live.

Why Be A Window Shopper?

America, today, is a land of potential abundance. How can this abundance reach human beings? By the same old Price System of earning and saving, or hoarding and getting others to work for you for pieces of paper, gold or silver? How can it reach people that way, when the only way to produce more is to work less ourselves and employ more machines! It is very puzzling, isn't it? We either have to change the old Price System, which will not work any longer and which prevents all the wonders from reaching human beings; or we will fall into a sad state of chaos. Why do we not plan so that we can have

what is here for us? What is holding it all back, causing us to burn, poison, waste, destroy this abundance? Man is afraid that he cannot let go of his old system of paper, gold, silver, price for profit. Man, with his ancient concepts, folklore and habit patterns cannot realize the change which is already here. From out of poverty, toil and labor has come potential abundance. There is enough, and more than enough, for every human on this Continent, if we can only see an overall plan, a national plan, unified, coordinated, working for the benefit of all.

What happens to 140,000,000 people is vitally important to what happens to us as individuals. If 140,000,000 people had all the food they could consume, all the clothes they needed, and real houses, not the dumps such as people live in today, it would make a lot of difference to you and to me; whereas if you or I obtain an income of \$20,000 a year, it makes little or no difference at all to the other 140,000,000. True, we, as individuals, may live more comfortably and play lady bountiful to a few people around us, but in the whole scheme of life it would have little or no effect. We must learn to think of the social system as a whole; we must learn to become impersonal. If we wish to advance our personal interests (everybody does), then the only way to do it effectively is by adopting an impersonal approach.

Most people are thinking of the effects of a social change on themselves only. 'I would not like,' 'I don't want,' 'I don't believe,' 'I have a brain.' 'Some people use their brains, others only their hands, why shouldn't I receive more?' 'I am energetic, others are lazy. I love to work and keep my self respect. Am I to get the same as the lazy human who

won't work, who is a parasite on society?' etc. Another question so prevalent is: 'Who is going to control? I would want to know the type of man or men who are going to control.'

It's always ourselves, and our own petty problems that we think of. These questions are endless. As we said in the beginning, it is not the men but the social system. How much do we actually know of the men who today are running the country? We only see the strikes, the endless quarrels between labor and management. We read of dangerous cartels on the one hand and that under this system cartels to maintain scarcity are necessary. We must realize now that under any social system, we must play the rules of the game or go under; and the rules of the game of the Price System are based on scarcity.

You cannot let George do your thinking for you. You must find out for yourself the means whereby you live and how it applies to society as a whole. Technocracy was born in America of American conditions. It arose out of a 14-year long survey of our natural resources, transportation, machines, trained personnel, etc. What was discovered by the survey enabled those men to determine the next most probable development in the trend of events in America. Today, all over this Continent, countless thousands of men and women are learning how to wipe their minds clean of preconceived ideas and to speak a new language which will have to be used by the majority in the future. Statements, such as, 'in my opinion,' 'I like,' 'I wish,' 'I believe,' will fade out and be replaced by 'we know,' 'it is a fact,' 'the design,' 'the technique,' 'the magnitude of operations,' and others. Physical laws will decide the form of social system in which

we will live. The physical is that which we can see, feel, hear, taste, touch and measure. All that is real is measureable. What cannot be measured is not real.

Use Your Measuring Stick

Women of America, Technocracy should be easy for you to understand. Housewives measure from the time they awake until they go to bed. The average woman must be scientific and realize the significance of measurement. The size of your family determines the amount of coffee, eggs and toast for breakfast. The beds, as designed, determine the size of the sheets, blankets and spreads. The size of the floor determines the length of the carpet. You do not guess at the size of your windows, or the blinds would not fit. You must measure accurately the size of your clothes, shoes, hats. All these go by measurement. How do restaurants manage? If they want to succeed, they measure, so many slices of meat to the pound, so many cuts of cake, and all are standard size. This is the intelligent way to work, and intelligent women work that way. The whole of society's needs can be handled in exactly the same way. Measure the consumption, no waste, no black markets, no burning, poisoning, ploughing under or subsidizing. Just produce and distribute for 140,000,000 people on the basis of need; and the need is decided by the amount consumed.

By the use of Technology, bigger and better machines, America can produce more than enough to go around. Then we could afford to be generous to Europe, without denying Americans the right to their heritage, a higher standard of living. Always remember that *to keep the Price System operating, we must have scarcity.*

It won't work any other way.

If we cannot get scarcity any other way, then under the Price System we must create it artificially. That is what we did for years when we ploughed under, etc., until the war came and helped us out. It took a war to reemploy men, to produce more than ever before in the history of man. We hear people discussing the destruction of butter because of lack of markets, etc., and yet we do not realize the miracle of being able to produce such vast amounts. Here is an example of why our system will not work. If the butter had been put out on the market for people to use, the price would have to be so low that from the farmer on down no one could make a profit. There is no value in abundance.

Equal But Not Identical

It is like a fairy story, with its goblins and its giants. The fairy godmother is TECHNOLOGY. America has gone ahead with all its resources to build a design for living greater than was ever conceived. Are we going to let the goblins, the 'tycoons' of industry, the 'lords' of labor, the politicians, the present outmoded Price System, keep this abundance from coming into our homes? Or, are we going to let the fairy Godmother TECHNOLOGY work for us by applying science to our distribution problems as we apply it to our production! It is an easy problem to understand.

First, we make a blue print, make sure it is correct, then build the design and follow it. An excellent example is the automobile; we may not like it, we may feel it should be otherwise, but if we want to run it, we obey the design. The rules are laid down for us.

Another is the telephone. If we want to get the call, we take up the receiver and put the phone to our ear. We may be lying down, or upstairs, it matters not; if we want the call, we obey the design. It will not work any other way. Now, do you see what we mean when we say the days of 'I wish,' 'I feel,' are over? We operate the mechanism as it is designed, or it will not work.

Women are accustomed to facing the facts of life. In many ways they have a clearer insight into certain things than men have. Some one once wrote that 'Woman is centripetal.' Her tendency is to interpret experiences in terms of her own biological world as the keeper of the fire and the trustee of coming generations. The Price System has translated this in practice into the economics of 'kinder, kuche und kirche.' The natural design inherent in women cannot be denied. Women are equal to men but not identical. As such, they have a 50-50 interest in social change which will free them from the ages-old sentence of mediocrity passed upon them by the Price System 'when knighthood was in flower.'

We hear the commentators over the radio and we read the newspapers. We are told by many wise-acres all the things that are wrong. None of our present-day leaders have come forth with a blueprint or a design for overcoming any of our domestic obstacles. Only Technocracy has such a blueprint, a design fitted to the age in which we live.

Women of North America! We have a 50-50 stake in this great land. Let's let the dead past bury its dead, and take our stand on the side of Science and Technology. Investigate Technocracy! Join this movement and take your place beside the men. One for all and all for one.

Technocracy and Your Trade

The Welder and Flame-Cutter

By Organization Division, 8741-1

Machines Make Jobs—Scarce

'The employment outlook for welders is less favorable than for many other metal working occupations. . . .'
Thus begins the opening sentence of Bulletin No. 884 of the Bureau of Labor Statistics, entitled 'Employment Opportunities for Welders.' The Bulletin continues in the first paragraph as follows: 'An immediate post-war drop in the number of welding jobs is indicated despite the evidence of increasing use of welding in many industries.'

This may seem strange to the uninformed. Why should an increasing use of welding be accompanied by a drop in jobs? Haven't the 'explainers' of the Price System always assured us that 'machines make jobs'? A part of this drop is due to the cessation of shipbuilding and other war work. However, the implication in the sentence that a long-time trend is at work in the welding trade is correct. The use of welding is increasing, but welding jobs are not increasing in proportion. Furthermore, the increasing use of welding is destroying jobs in the manufacture and use of bolts, nuts, washers, rivets, etc. It is even invading and competing in the metal casting industry.

Welding might be called an ancient art. It started as a variation of forging, which is the 'process of hammering, shaping, pressing, bending and joining metals while they are in a hot, pasty condition.' For centuries welding remained largely a maintenance and repair function for joining metal parts which had been broken.

In the latter part of the 19th Century the Oxyacetylene gas torch was developed for welding. Following it came electric arc and electric resistance welding. From then until the first World War, the function of welding had a slow development. Progress in welding was stimulated greatly by World War No. 2.

'Comes The Revolution'

In Oxyacetylene gas welding, a direct flame is used to produce a molten condition of the edges of the metal to be joined. Electric arc welding produces a melt of the edges to be joined by an electric arc passing between the metals and an electrode. In resistance welding the natural resistance of metals to the flow of a current produces the heat and joins the metals at one or more spots. There are several special types of welding, such as Thermit welding, atomic-hydrogen welding and helium-arc welding. Thermit welding is used for repairing large units of iron and steel such as large crankshafts, rails and heavy frames. Atomic-hydrogen and helium-arc welding are variations of the standard electric arc method. They are used chiefly for welding aluminium and magnesium.

The occupation of oxyacetylene flame cutter is related to welding. The difference between the two is that the 'burner' uses the flame to cut metal instead of welding it. The two occupations are more or less interchangeable, but flame-cutters constitute less than 20 percent of the trade. However, welding cannot be considered a

single or dual occupation. It is rather an overall function, with several skilled or semi-skilled variations.

Welding applications are divisible into five main types. Maintenance welding, salvage welding, toolroom welding, construction welding and production welding. The first three are modern usages of the centuries' old repair function of welding. Construction and production welding are new uses. Construction welding is used on pipe lines and on structures of metal, such as ships, etc. Production welding is a step in the process of manufacturing such items as automobiles, machinery, electrical equipment and miscellaneous iron, steel and ferro-alloy products. This is the line of application where the most jobs are supposed to be.

Finally, the last division of welding is that between hand welding and machine welding. Machine welders constitute the larger group employed in production. Hand welding is used chiefly for small parts, and those difficult to reach, and in construction work. While acetylene welding is the older type, electric-arc welding is the method most frequently used. Logically enough, its biggest growth occurred between 1931 and 1940. This is illustrated by the production of electric arc welding electrodes during the period. In 1931 only 16,000,000 pounds of electrodes were produced. In 1940 the production had risen to 199,000,000 pounds.

His Brow Is Wet—With Worry

The Census of 1940 lists 139,281 welders, of whom 14,541 or over 10 percent were unemployed at the time. This is a normal condition for the Price System. There must always be a scarcity of jobs, as well as goods and services. It took World War No.

2 to abolish the scarcity of jobs for welders. By the end of 1943, when the peak of wartime jobs was reached, there were 364,000 welders employed. More than 50,000 were women. About 290,000 were hand welders, 26,000 machine welders, and 48,000 were flame-cutters. More than half of the total were employed in shipbuilding.

An estimated 1,500,000 persons received welding training between 1940 and 1944. With the decline of shipbuilding and airplane production several hundred thousand war-job hand welders are on the outside looking in. In addition, the other 1,200,000 odd, who were fully or partly trained to fill 364,000 war jobs, have a slimmer chance than ever of making any connection. Yes, the use of welding is increasing in production, but most of it will be done by machines. Bulletin No. 884 has this to say about it:

The greatly expanded use of welding during the war also stimulated the development of new equipment and methods. These developments tended in many cases to reduce the skill required for welding jobs. . . . A great many welding improvements have as their objective the reduction either of the number of welders required for a given volume of welding or the degree of skill required, or both, and it is likely that the degree of future acceptance of welding as a method of fabrication in many industries is related to—perhaps even contingent upon—the cutting of the welder man-hours required in production. Prominent among these innovations are automatic arc and acetylene-welding machines, which are being applied to an increasing number of production processes..

A considerable reduction in man-hours is possible through the use of automatic arc-welding machines and positioners. The use of positioners (mechanical) to place the work for flat horizontal welding has reduced the time required for some welds as much as 50 percent. . . . employment opportunities in hand-welding . . . will be relatively unfavorable for a number of years after the war. . . . Welding will also be in competition with plastics and with the stamping and pressing of sheet metal, but in these instances, it is more likely that welding will be affected adversely. . . . stamping tends to reduce the need for welding in joining smaller units in assembly of many products.

'It's That Old Devil, Sea'

There you have it. Machine welding is rapidly displacing hand welding. T.N.E.C. Monograph No. 22 states that:

In the production of 1940 automobiles a new method of spot welding fused a 4-door sedan together almost instantly at 222 points. In this type of automatic application, spot welding represents more than a transition from the skilled riveter to the welder, since the mechanism, after being set in motion, advances to the correct temperature, fuses numerous points, and then ceases operation, with hardly any human labor involved.

A study made for the Subcommittee on War Mobilization entitled 'Wartime Technological Developments' lists and describes 99 major developments in welding during the

war years. So it goes. That old devil, technology, is still at it. To make matters worse, or better (depending on how much Technocracy one knows), we're only at the beginning of the application of welding. The Welding Research Foundation allocated \$250,000 for research in 1945. Battelle Institute budgeted \$250,000 for welding research in 1946. The Office of Scientific Research and Development made a huge money outlay for welding research between 1941 and 1945 and farmed the job out to 9 outstanding research institutes. Yes, sir! The boss sure knows a good thing when he sees it. Even the staid American Institute of Bolt, Nut and Rivet Manufacturers is worried. They have set up a research program in opposition to welding and in favor of bolts, nuts washers and rivets, at Northwestern University and the University of Illinois.

'This Way To The Egress'

Where does all this 'progress' and counter progress leave the welder? Well, sir, it leaves him smack behind the proverbial eight ball. You don't think this 'progress' is for his benefit, do you? Indeed not! It is designed to eliminate him from the picture as much as possible. Of course, a few will always benefit. That's the way the Price System works. But, the great majority of hand welders, both men and women, are rapidly being maneuvered into the position of being practitioners of a useless skill. Business Week states in its December 29, 1945, issue that: 'And at least one maker claims a single machine can do the work of 40 hand operators.'

'You Can't Work Here Anymore.' That's what technology says to an increasing number of workers in nearly all lines. Welding is a comparatively new occupation. Yet the birth rate

of new jobs created has already sunk below the death rate of old jobs destroyed by technological developments in that line. This is glad news, or sad news, for welders depending on how much Technocracy they know. It's the same way with the overall impact of technology on the entire social structure of the Price System. It's glad news for America.

There is no possibility for the welder to solve his problem apart from the solution of the whole American social problem. His future is tied to the future of every other North American citizen. But there is a solution. As Barnum said to Bailey: 'This is the way to the egress.'

There is a new body of thought dealing with the individual and collective social problems of Americans from the viewpoint of science. It has studied the physical history of America and emerged with the only possible answer. When the welder is tired of chasing Price System rainbows, he

will find Technocracy ready, willing and able to answer all his questions.

The only way to produce more in the Power Age is to employ less man-hours of labor and more technology. The only way to distribute the abundance now made possible by the advance of technology is by the use of technological methods. It can't be done for a Price. Ergo: The only way to get more goods and services and better goods and services is to reorganize our entire social system along engineering lines.

This will provide and guarantee every North American with Abundance, Distribution, Security and Equal Opportunity. What more can the welder ask? What more can any citizen ask? All we have to do is Organize—Educate—and Operate.

Investigate Technocracy NOW! Then join and help to work for the General Welfare of All. In this will be found the solution to your own problem.

Business or Technology?

'Railways are strips of oak plank . . . the wheels made to fit the rails. In this way nearly three times the weight can be moved by one horse than he could manage on a common road.' (Excerpt from an editorial in *Philadelphia Aurora*, January 1801.)

'The automatic electric block system, in which the wheels of the locomotive strike a lever pivoted to the rail and set signal lights at danger until the train is out of the block, was invented in 1867. The first installation was on the New York and Harlem Railroad.'—*Science Digest*, March 1946.

Ed. Note: Yet, 77 years later, in 1944, only 8000 out of 167,000 miles of passenger road in the U. S. were equipped with automatic train controls and 50,000 miles had no block signal system at all.

DID YOU KNOW that a new machine has been perfected to print railroad tickets instantaneously and thus eliminate necessity for station agents maintaining a large supply printed for various destinations?—*Chicago Daily News*, August 21, 1945.

Fuel consumption is the largest single item of the Canadian National Railways' expense bill. But whereas it took 148 pounds of coal to haul 1,000 tons of loaded cars twenty years ago, today the same work is accomplished with 112 pounds of coal at an annual saving of \$21,000,000.—From *Montreal Gazette*, January 4, 1946.

The number of Diesel locomotives in the U. S. increased from 797 in 1940 to 3022 in 1944. (*Diesel Power and Diesel Transportation*, February, 1946.)

Technology Marches On

They've Got You Coming and Going

By Research Division, 8741-1

Behaviour Control Is Management

THE American Management Association recently held its Spring Production Conference in New York City. A questionnaire sent out before the conference revealed that most industrialists are worrying about how to increase man-hour productivity. That's natural. But, pray, when didn't industry worry about that problem? One thing is sure, the industrialists will never have to worry that a time will ever come when they won't have to carry that pet worry around. For, as long as the Price System lasts, the necessity to reduce man-hours of labor, increase productivity and cut costs will increase. It's a part of the physical trend inherent in the impact of science and technology.

It seems that the problem is particularly acute at this time. For some reason or other, neither industry nor labor have been able to shake off the gravy train psychosis they acquired during the war. Maybe it's the OPA's fault. In any event, management is complaining about reduced efficiency. Ford claims that its post-war labor efficiency is 34 percent lower than prewar. The Freuhauf Trailer Co. says plaintively: 'We just want to get back to the 1939-1940 levels.' The training director of Johnson and Johnson says: 'Industry is full of men who can tell why a machine doesn't work, but not why a man doesn't.' The Wall Street Journal says, in its issue of April 25, 1946: 'Man-hour productivity started to fall off during the war. Govern-

ment contracts on a cost-plus basis allowed industry to spur production by increasing the total labor force rather than efficiency.'

In other words, because Uncle Sam was paying the bill, industry padded its payrolls. Now there seems to be some difficulty about unpadding them, or speeding up the workers. The answers the Managers worked out are as follows: Wage incentives, new incentive standards, incentive pay for foremen, union time-study stewards, employee suggestion systems, worker cooperation, time study methods, social affairs, promotion of athletics, credit unions, cafeterias, rest periods, medical programs and that looloo called the gang-bonus scheme.

The Wall Street Journal says of this scheme: 'Under this scheme, a task is determined for an entire group, say ten men. If eight can do the work of ten, the eight then get the pay of ten.' And what do the last two get? They get the gate, brother. That's management for you.

There is no doubt the Managers will be successful in slaughtering a lot of man-hours of labor. This is illustrated by the success achieved at Marshall Field and Company's huge Chicago store. A saving of 16,000 man-hours per year was chalked up in the Credit Department alone by simplification of work routine. Essentially all these schemes of Management are efforts to control the behaviour of human beings by orienting environmental circumstances toward the desired end. What the Managers can't take care of, the engineers can, with new and faster machines and

new and better technological processes and methods. There are plenty coming up all the time. (Ed. Note: See *Technocracy Study Course*, Lesson 20)

Quality Control is Engineering

A relatively new method of increasing production and cutting costs is coming into widespread use. It is known as Quality Control. Before the war only about a half dozen firms were using it. Now, over 1200 are doing so. The Quality Control System was originated by Dr. Walter A. Shewart, a mathematician of the Bell Telephone Laboratories. Early in March 1946, the Midwest Quality Control Conference was held at Chicago. It drew over 700 inspectors, statisticians, engineers, etc., from 38 states. Quality Control was first used in 1925 by the Bell Telephone Laboratories. Westinghouse Electric and Manufacturing Co. began using it in 1937. Its rapid growth came during the war after the War Production Board had set up a committee to simplify the system.

Quality control is a system of controlling the work of a machine to exact specifications and testing the output by mathematical sampling and careful scrutiny of products as they go along the assembly lines. When a machine gets out of adjustment for any reason and starts producing 'scrap' the quality control engineers go into action. 'The work of the machine is plotted on a chart which, with two parallel lines indicating the upper and lower tolerance limits on the piece, tells the experts what is wrong and what must be done about it.' Then the machine is reset to exact specifications. Quality standards are maintained mathematically instead of by the older trial and error system. This ups production and lowers costs.

The Army adopted the system early in the war. In one plant 42 inspectors had been needed to check every \$1,000,000 of material accepted under the old method. After adopting Quality Control, 30 of them were eliminated and 12 men did the same job. Before adopting the new system, Westinghouse had 421 inspectors and 21 supervisory inspectors in its Lima, Ohio, plant for 5500 employees. It cost 15.9 cents per man-hour to correct defective parts. After changing over, 206 inspectors and 10 supervisors were laid off and cost per man-hour of defective parts fell to 3.9 cents. The output of a punch press operation put under control charts rose 30 percent; lamp production went up 11 percent and foundry output rose 30 percent.

The Fansteel Metallurgical Corporation was able to cut its scrap on one machine operation from 16.5 percent to 2 percent, and raise output per man-hour. Ninety days after installing control charts, Arnold Schwinn and Co. cut its rejects from 13 percent to 1.7 percent and raised production from 77.3 to 85.7 units an hour. The System isn't limited to inspecting parts and controlling machines. Aldens and Co., a big mail order house, reduced the number of errors in packaging and filling orders by two-thirds, thus lowering cost of handling, adjustment and general operations.

Various other examples of the results achieved by Quality Control Charts were given at the Conference. By cutting inspection delays, for instance, the system reduces in-process inventories and cuts down the storage space needed for material waiting to be checked. It helps to keep the products moving. It also helps to keep the customers moving back for reorders. For, Quality Control can be

pitched on a high, medium or low level. It all depends on what you want. In time of war, a high quality is desirable. In time of peace customers are desirable. And, under this Price System you can't get resales by making things too good.

The *Wall Street Journal*, March 7, 1946, had this to say on this point: 'Mr. Edwards (George D. Edwards, director of Quality Control for the Bell Telephone Laboratories) said the system sometimes shows a product has too much quality for a competitive market. Cost can then be cut by reducing quality.' There you have it. Regardless of all the semi-intelligent rationalizations presented, the fact remains that free enterprise is not interested in making products good but in seeing to it that they are not made too good. That's one of the main points. Of course, all the accompanying blessings of lower unit-costs, higher output per man-hour, etc., are important too. The business of Business is to lighten the sucker's burden (pocketbook). For a classic illustration of the points brought up here, see *Technocracy Study Course*, pages 161 to 164.

Mechanics of the U.S. Forest Service have devised a highly efficient, new type fire fighting plow. It is called the 'Ranger's Pal.' In fighting forest fires, the practice of plowing a wide furrow around the fire has long been employed. In the past the Forest Service has made use of manpower laboring with shovels, rakes and mattocks. In recent years 35 to 50 horsepower tractors, drawing heavy plows, have been used. The latter method was more efficient than the earlier but its drawback was that it took too long to get the equipment in place to use.

Now comes the 'Ranger's Pal.' It is a light plow drawn by an 18 horsepower tractor. Both units can be loaded on a truck and speeded to the scene of the fire. 'The plow includes a stout beam with

a rolling coulter and a plow of the middle buster or two-way type that plows a clear furrow 28 inches wide into the mineral soil. A set of discs and wings spreads the loosened mineral soil to cover the forest litter on each side of the furrow. The result is a fire line from 48 to 54 inches wide. In the two seasons in which the "Pal" has been developed and improved it often happened that the "Pal" has gone in and done the control job before the heavier equipment could get to the fire fighting front. A Ranger with a "Pal" can get to a fire rapidly in a one and one-half ton truck and can do as much work in clearing a fire line as can a Ranger and 20 or 30 men working with mattocks, shovels and rakes.' (*U.S. D.A. Clip Sheet*, January 6, 1946.) Ed. Note: See *Technocracy Digest*, July 1945, page 19.

'The process by which the excess labor supply of the farms is drawn off to the cities is of two patterns to which I shall apply the simple words "pull" and "push" . . . When the "push" operates, people leave the farms because they cannot make a living there any more. This happens when a machine comes in that is so much more efficient than hand labor that it takes away the workers' jobs by making the price of the product so low that farm families cannot make ends meet any more unless they use the machine (also). A disaster, like the boll weevil, or the dust-bowl drought, may also force farm families out.

'The mechanical cotton picker . . . is likely to operate on the "push" principle. The new developments in sugar-beet growing, i.e., seed treatment to save thinning, and mechanical harvesting, will reduce greatly the use of migratory gang labor. . . . The "push" principle may even begin to operate in some dairy-farming regions.

'If labor-saving is to make headway on one half or more of the farms of the U.S. located on the less fertile lands, some procedure must be devised for enlarging and equipping them. . . . Why stop with farms of 160 to 380 acres? Will not labor-saving equipment be introduced more rapidly if farms are several

thousand acres instead of a few hundred? And will not innovation proceed more rapidly? The answer is, yes, to both questions.

'The most important development in scale of operations has been the increase in size of family farms as tractors have replaced horses in the Midwest and Great Plains states especially. Corn Belt family farms are now pointing toward 240 to 320 acres. A Diesel-powered family wheat farm may run to 3,000 acres. The family poultry farm of the future may include 5,000 hens ;one man is now taking care of that number of layers on a few farms.

'Secretary Wickard in his recent testimony on the cotton problem spoke of two kinds of cotton-harvesting equipment: one, a mechanical stripper used on the high plains of Texas, which reduces the harvesting time to 4 or 5 man-hours per acre, and the total labor time for the crop to 8 man-hours per acre; the other is the mechanical picker which, combined with 4-row tractor equipment for the other operations, reduces the labor

time on Miss. Delta cotton from 150 down to 25 or 30 man-hours per acre. An agronomist in the Carolina Upper Coastal Plain reports 38 bales of cotton from 25 acres on one farm without any hand labor excepting for picking, and adds that the cotton-picking machines demonstrated in his area this year were definitely successful. We can . . . expect that mechanization will not only push labor off Southern farms, but will cause cotton to shift toward the sections which it favors. Artificial price supports can retard such developments, but not stop them. Government aid had best be used to facilitate rather than to prevent them. Secretary Wickard's Reconversion Program for the South is pointed in this direction.'

(From article 'Factors Conditioning Innovations in Agriculture' by Prof. John D. Black, Harvard University, in *Mechanical Engineering*, March 1945.)

Ed. Note: See Forty Thousand Farms in Technocracy, A-15, December, 1938, especially last 6 paragraphs on page 8.

Sacred Cows Are Expensive

'In the past 100 years, Americans have destroyed 230,000,000 acres of formerly fertile farm lands, or more than six times the area of New York State. The destruction is rapidly continuing. Unless it is stopped, America faces a hungry future. That startling warning was issued this week by Hugh H. Bennett, chief of the U.S. Soil Conservation Service. He said the United States has 460,000,000 acres of good farm land left, or only twice as much as has already been destroyed.

'The destruction was caused by poor methods of cultivation and unchecked erosion, Bennett explained. He declared that we cannot afford to waste another acre.'—From *Labor*, September 22, 1945.

One fool can ask more questions in a minute than twelve wise men can answer in an hour.—Lenin.

A Department of Agriculture survey shows that 356,000 acres of Louisiana land suitable only for grazing are being used for crops while 2,796,000 acres suitable for crops are being used for grazing or woodland.—*New York Times*, Nov. 11, 1945.

Free enterprise in farming is far more efficient at destroying natural resources than the forces of nature are at creating them.

It takes nature from 300 to 1,000 years to build up one inch of top soil on land. In less than 200 years 'free enterprise' practices in farming have managed to destroy about 3 inches of America's top soil by wasteful farming methods.

There were 5,000,000 rivets used in building the battleship Missouri.

Flashes of American History

Reprinted from 8141, July, 1937

II—The Cotton Gin and Slavery

By Ben H. Williams, 8141-15

The ratification of the Constitution by most of the thirteen original States and the subsequent inauguration of Washington in 1789 as its first President, found the United States fairly launched upon its independent career as a nation.

The total population of this narrow fringe of States along the Atlantic coast in 1790 was slightly less than four million, mostly rural. Roads in the hinterland for the most part were single-horse trails. A journey by stage from New York to Philadelphia consumed three days, and double that time to Boston. New England seemed an endless distance by land from South Carolina.

Slavery and the Constitution

Negro chattel slavery already had been outlawed in some of the Northern States. It had been found unprofitable in the Colonial experience of New England and Mid-Atlantic farmers and manufacturers. Shrewd Yankee merchants, however, had found a lucrative business in the capture of African natives to be sold to southern tobacco plantation owners, or traded in the West Indies for cargoes of rum and molasses for Northern consumption.

The Founding Fathers in the Constitutional Convention discussed the "slavery problem" in a somewhat desultory manner, with little evidence of sectional differences. Delegates from the South expressed doubts about the permanence of the institution, on the ground that its further expansion might prove unprofitable in the South as well as in the North. John Adams of Massachusetts indulged in some philosophical observations to the effect that a wage worker in New England toiling twelve hours a day for a bare subsistence was as much a slave

as a plantation chattel in the Carolinas.

The insistence of delegates from the tobacco and sugar cane States finally brought the Convention to the decision that chattel slavery should remain as an institution in the land of the free, but that the importation of slaves should be unlawful at the end of 20 years following ratification. Cotton did not figure in the slavery discussion at all, since cotton was rarely grown in the South except in flower gardens. The 'irrepressible conflict' was nowhere in evidence in 1787.

Advance of England's Textile Industry

Meanwhile, a series of events had taken place in England that were destined to have profound repercussions on this side of the Atlantic. One after another in the latter half of the 18th century there appeared several remarkable devices in spinning and weaving machinery for the English textile industry, culminating in Cartwright's power loom. And James Watt's improved steam engine had

stilled the clamor of these textile manufacturers for cheap and adequate power. There still remained one serious obstacle to the advance of this revolution thus inaugurated by the textile industry. As one writer puts it: notwithstanding the wonderful inventions and adaptations by Hargreaves, Arkwright, Crompton, and Cartwright of England in spinning and weaving machinery, the arch of the textile industry near the close of the 18th century still lacked its keystone. That keystone was the necessary supply of cotton.

Most of the cotton used in 18th century textile manufacturing was of the long staple variety and came from Asia and the West Indies. The short staple variety was such that the separation of the seed from the fiber by hand made it unprofitable to grow for market. Picking out the seeds from a five-pound lot of raw cotton meant a day's work for a man or woman. A crude roller gin first used in India increased a bit the output of the more easily cleaned long staple variety. As far as cotton was concerned, the budding textile industry of Great Britain had apparently reached an impasse. It fell to the lot of an American inventor to make possible the necessary supply of cotton and thereby to set the keystone in the arch of the textile industry.

Enter: The Connecticut Yankee

A distinguished scientist of a later period evolved the saying: "Chance operates for good only to the mind that is prepared for it." So, when Eli Whitney, in 1792, at the age of 27, graduated from Yale, and shortly afterward journeyed to Savannah, Georgia, to accept a position as teacher in a private school, he had previously passed through a thorough mechanical

training in his home shop on the Massachusetts farm.

Young Whitney had been adept at all mechanical tasks from childhood. But there were no technical schools in the closing years of the 18th century, and no careers for college boys except as preachers, doctors, or lawyers. Many a promising mechanic was compelled to waste his talent.

But fate was kinder to Eli Whitney. Arriving in Savannah, we are told by one biographer that he found the teacher's job taken by another, so Whitney was about to return to Connecticut. However, having met the widow of Nathanael Greene, of Revolutionary War fame, he was invited to remain as a guest at her home, and to study law. Again fate made a kindly shift for the young Yankee. One day, Mrs. Greene complained that her embroidery frame was a wreck and could no longer be used. Whitney offered to make her a new one, which proved much superior to the old frame. A few days later Widow Greene was entertaining some of her distinguished friends. The conversation turned upon cotton raising, and the need of some device with which to separate the seed from the lint. Mrs. Greene showed her guests the new embroidery frame and said: "Apply to Mr. Whitney: he can make anything."

No one took this pleasantry seriously except Whitney himself. Having never seen a cotton plant, the next day he went into the country, procured some of the bolls and gave the same a minute examination. Whitney then set to work in Widow Greene's basement and, after having overcome difficulties such as a mechanic alone might conquer, in a comparatively short time emerged with a completed cotton gin ready for trial. Many years afterward, Herbert Spencer, with a

philosopher's penchant for drawing subjective conclusions, remarked that when Eli Whitney came out of that Georgia basement with his cotton gin, "anarchy was born."

Cotton Comes Into Its Kingdom

This simple invention, so essentially perfect in the original design by Whitney that no basic change has since been found necessary in any subsequent improvements of the original patent model, set in motion profound social forces in more than one direction. Speaking of its effects on the expansion of cotton production, George Iles, in "Leading American Inventors," says:

"In 1784, an American vessel arrived in Liverpool, says Denison Olmsted, Whitney's biographer, with eight bags of cotton on board. It was seized by the custom house, under the conviction that cotton could not be grown in America. In 1785, five bags were landed at Liverpool; in 1786, six bags; in 1787, 108; in 1788, 282. In 1793, the year in which Whitney devised his gin, at least 5,000,000 pounds of cotton were harvested in the Southern States. This huge figure was soon utterly eclipsed; in 1825, the year of Whitney's death, the cotton exported from the United States was valued at \$36,845,000; and all other exports at \$30,094,000. Let us now leap to 1912, with a crop estimated at 7,000,000,000 pounds, worth about \$770,000,000."

The 'Irrepressible Conflict'

Whitney's original gin was able to clean 5,000 pounds of short staple cotton in one day, thus doing the work of 1,000 persons by hand. This displacement of man-hours sounds quite modern, doesn't it? But, at the

stage of American industrial and agricultural expansion in 1793, the effect of that displacement was quite the opposite to that threatened in 1937 by its distinguished successor, the mechanical cotton picker. Cotton plantations not only expanded throughout the richer areas along the coast, but spread inland to the Piedmont where ever cotton could possibly be grown. Slave labor not only became profitable, but very much in increased demand. The fifteen years from 1793 to 1808 when the importation of slaves was to become 'unconstitutional' were banner years for Yankee slave traders. After 1808, 'bootlegging' of 'black ivory' became as lucrative, and less dangerous, than similar 'rumrunning' in more recent prohibition days. Moreover, the breeding of slaves became a regular pastime of Southern plantation owners, so much so that today scarcely a full-blooded African can be found in the United States.

At the same time, not only did the textile industry of England enter upon a period of great expansion, but that of New England also boomed. Many of the sanctimonious Puritans of Massachusetts and other Northern textile centers, who deemed it un-Christian to 'own human being' had no moral scruples against employing children just out of their mother's arms for thirteen hours daily at their fast-moving machines. In old England, also, the story of the ruthless exploitation of child labor in the textile industry, as told in reports of factory inspectors during the greater part of the nineteenth century, is one of the darkest chapters of English history. Thanks to Whitney's cotton gin, the expanding cotton plantations of the Southern States made possible the vast development of the world's textile industry.

Meanwhile, due also to the tech-

nological advance in transportation and other industries, the 'irrepressible conflict' between the two sections became more and more pronounced. The cotton States sought universal legality and freedom of movement of the slave traffic; while sentiment against its extension grew rapidly in the North and Northwest. The 'tariff question' also divided the two sections; the South desiring free trade especially with Great Britain, while the Northern farmers and manufacturers demanded a protective tariff. Politicians, as usual, staged endless compromises, while evading the major issues.

Another form of interference working against a possible peaceable solution of these sectional differences came from a little band of fanatics under Wm. Lloyd Garrison, with their cry: 'No compromise! Immediate and unconditional abolition of slavery!' The

influence of their agitation reacted in such a way as to 'harden the hearts' of the Southern slave owners, and thus to render an objective view of the problem impossible. Finally, secession occurred, a four years' Civil War 'for the preservation of the Union' followed, and as a 'war measure' Lincoln's Emancipation Proclamation in 1863 formally abolished chattel slavery in the United States.

A simple technological device, in 1793, had thus laid the foundation for seventy years of momentous social change in America.

References:

For the story of Whitney's invention: Geo. Hes. "Leading American Inventors"; Rupert S. Holland, "Historic Inventions"; Dwight Goddard, "Eminent Engineers."

For the expansion of the cotton area and other events leading to the Civil War: Beard, "Rise of American Civilization"; numerous debates in Congress and published speeches of statesmen, abolitionists, and others.

Starting to Percolate

'There's the nearest thing to civil war going on in this country since the firing on Sumter. You've got to take sides, one way or the other. . . . You can't go on being a border state, forever. There are words to be said now that will set the people marching toward a new dawn of peace, equality and abundance. But they are being spoken nowhere in the neighborhood of the White House.'—McAlister Coleman, in *The Progressive*, February 25, 1946.

'Scientists have caused many and tremendous changes in our way of living, and these have had their indirect effects on our social and political forms. . . . Scientists, in effect, become our real governors, behind the scenes, not the political leaders and the special economic interests of all sorts that so often move them. The danger is that political leaders

and great economic interests that have so much influence might fail to recognize the need to adapt and to adapt faster than man ever has had to adapt before.'—Thomas L. Stokes in his column, in the *Chicago Sun*, April 2, 1946.

What distinguishes a scientist's thinking from ordinary thinking is that when a new conclusion is inevitable it must be accepted—*whether one likes it or not*. One small, youthful fact can slay any impressive, aged theory. Having learned this, scientists unhesitatingly have taken a stand in the present crises. * * * Public and scientists alike must revise their thinking and their politics to suit the needs of the atomic age. When this revision is made, we shall have regained confidence in the future. (Gerald Wendt in *Science Illustrated*, May, 1946.)

Each in His Own Tongue

By Publications Division, 8741-1

Voice of The Price System

From One Rat To Another

Rats are properly the concern of private enterprise. We protest against the city's use of Hitler's methods on us. We have a right as free-born Americans to destroy the city's rats without competition from the municipal government.

Extract from a resolution adopted by the pest exterminator's association of Oklahoma City, Okla., protesting against passage of a city ordinance which would compel property owners to ratproof buildings (as quoted by the *American Freeman*, July 1946).

I Love You Truly

We want private enterprise, and there is no man in industry living that believes more in private enterprise as we know it in America than I do . . . We not only have a stake so far as our wages and standard of living are concerned, but the Congress of Industrial Organizations has a stake with you, maybe even greater than your stake, in preserving our American system of private enterprise.

Van A. Bittner, assistant to the President, United Steel Workers of America, CIO, in a talk before 5,000 leading industrialists at the Waldorf-Astoria Hotel, New York, December 6, 1945. The meeting was sponsored by the National Association of Manufacturers. (as reported in the *Chicago Sun*, December 6, 1945).

Devil Take The Hindmost

We've got a gang in power who think solely of the consumer, and

usually in terms of 'protecting' him—. This is a producing country. —America never got rich by adhering to the consumer's viewpoint.

Herbert U. Nelson, executive vice-president of the National Association of Real Estate Boards, at a luncheon club interview with the Washington Bureau of the *Chicago Daily News* (as reported in the *News*, March 9, 1946).

Oracle of Lafayette Park

We must be careful when we give aid to other countries, that this aid is not used to nationalize their industries against us, to destroy our own competitive system, which, I think, should be preserved.

Bernard M. Baruch, successful Wall Street operator and unofficial adviser to many Presidents, in a letter for publication to Rep. Albert Gore (Dem. Tenn.) (as quoted in *The Nation*, November 17, 1945).

No. 1 Baloney Extra Fancy

Mass production and mass distribution would not have been possible had it not been for the brand system which is selling merchandise thousands of miles from its source of manufacture by using national advertising.

Henry E. Abt, managing director of the Brand Names Research Foundation, speaking before the Chicago chapter of the American Newspaper Representatives Association, April 9, 1946 (as quoted in the *Chicago Sun* of the same date).

Let's Abolish Fire Departments

President Truman claims that national health insurance is not socialized medicine, but if we look around us and take stock of the various socialized services we have, like the fire department, schools, post office and the civil service, we cannot see how the national health insurance plan can be called anything but socialized medicine.

Dr. Josiah J. Moore, treasurer of the American Medical Association, in a talk against Wagner-Murray-Dingell health bill, before the Uptown Lion's Club at the Edgewater Beach Hotel, Chicago, May 9, 1946 (as reported by the *Ravenswood - Lincolnite*, a neighborhood newspaper, May 15, 1946).

Political Conundrum

A more important question is whether children should be taught to depend on the federal government to feed them. Should the tender minds of little children be impregnated with the idea that the politicians here in Washington love them

more than their own parents? That is really the big question in considering this measure.

Representative Frederick C. Smith (Rep. Ohio), speaking against the bill to provide federal aid to school lunch programs throughout the nation (as quoted in the *Congressional Record* and reported by the *American Freeman*, June, 1946).

The Black International

This is no time for crack-pot schemes and theories dreamed up by dyspeptic philosophers. The philosophy taught at Loyola is the same which has been taught in Jesuit schools for the past 400 years. It is the philosophy upon which the declaration of independence and the Constitution were founded. It is the philosophy which will save the future.

Rev James T. Hussey, president of Loyola University, speaking before the citizen's board of the university, at a luncheon in the Union League Club, Chicago, on May 9, 1946 (as quoted in the *Chicago Daily News*, May 10, 1946).

Voice of Technology

Just Chiseling Around

Its effect (advertising) when used to publicize a particular manufacturer's product or a particular merchant's business, may be merely to shift consumer demand from one brand to another or from one merchant to another without increasing the total volume of goods sold.

From the Federal Trade Commission's 1944 report to Congress on 'Distribution Methods and Costs' (as quoted

by the *People's Lobby Bulletin*, May, 1946).

Peace of the Price System

The truth is that UN was designed for failure. The organization of nations is fundamentally powerless and was deliberately fashioned that way through insistence of its two chief authors. The right of veto, vested in five nations including ours is the instrument of its essential impotence.

Keith Wheeler in his column in the *Chicago Daily Times*, May 18, 1946.

It Won't Be Too Long, Now

The first atomic bomb not only killed men and destroyed buildings, but also obliterated at the same time all notions which constitute man's ideas about the political, social and economic world of today . . . Today we are on the threshold of the age of abundance. Shall we permit those who hold the magic key to obstruct the way.

Johannes Steel, in an article entitled 'The Golden Age or Social Suicide' in *Reader's Scope*, January, 1946.

Not A Bad Idea

I wish to God that one of the most flagrant price violators of each state was hanged in gibbets, upon a gallows tree five times as high as the one prepared for Haman. No punishment is too great for the man who can build his greatness upon his country's ruin.

George Washington, first President of the United States of America.

What Is More, It Can't

Thirty-four religious and educational leaders have denounced the atomic bomb an "an atrocity of a new magnitude." . . . Technological progress cannot be halted. The clerics denounced the first efforts to create natural substances by artificial chemical processes as blasphemous interference with the Divine Order of the universe. . . . The atomic bomb is technology's latest, greatest and most terrifying challenge to . . . a culture that has not yet adjusted itself to Watt's invention of the steam engine.

Extract from an editorial in the *Chicago Daily News*, August 22, 1945.

I Only Work There

The social effectiveness of the engineer today is almost entirely in-

direct. He develops, in general, what his employer wants, whether that employer is a government or a corporation. He has little concern whether his products are utilized for general welfare or for violent destruction. To politicians he delegates the responsibility for their use; and he rarely subjects their decisions to the same critical analysis to which he puts the data of his engineering experiments. . . .

Perhaps after all the world wouldn't be any better if the scientific point of view were more universally adopted and adhered to.

Well, then, there is a curious coincidence of the most productive state technology has ever reached—that of the last five decades—and the two most disastrous wars of history, not to mention one of the most widespread industrial depressions. Statesmen and lawyers, clerics and philosophers, businessman and ignorant populaces have had a chance, practically free from interference by engineers and scientists to show what they could do. It may be time to give the engineer a chance. But it won't be given to him unless he reaches for it.

John Mills, research engineer and author, in the introduction to his book 'The Engineer In Society,' published by D. Van Nostrand Co., Inc. (as quoted by the *Sci-en-Tech News*, May, 1946).

The Finger Points

Catholicism (Roman) is the Fascist form of Christianity. The Catholic hierarchy rests fully and securely on the leadership principle with an infallible Pope in supreme command for a life-time.

Count Kalergi-Coudenove, an ardent Roman Catholic, in his book 'Crusade for Pan-Europe,' p. 173 (as quoted by *The Converted Catholic*, January, 1946).

So Wags the World

Fascism and Anti-Fascism

By Research Staff, Great Lakes Technocrat

North America

United States

IT IS charged by official sources in the U. S. Military Government in Germany that there are still about 1,000,000 former Nazi party members in the American zone who have not been screened through an investigative process. Russell A. Nixon, former official of AMG, told Congress that the program of de-nazification was being sabotaged by the American Staff charged with enforcing it, because they did not believe in it. Nixon named Joe Starnes of Alabama, a Colonel with the Army of Occupation, as being prominent in discouraging the de-nazification program. Starnes is a former Congressman who was removed from public life by his constituency in 1944. When active in Congress he was vice-chairman of the

notorious Dies Committee of the House.

Dr. Farrington Daniels, Director of the University of Chicago Metallurgical Laboratory, announced early in May that scientists at the laboratory had completed plans for producing power from atomic reactions. 'We have reached the blueprint stage and soon we will have a turbine spinning-on power supplied from a small pile of uranium,' he said. The blueprints were sent to Oak Ridge, Tennessee, where the first power plant is being built. Dr. Daniels stated that the cost of fuel in producing electric power now averages only 20 percent of total costs. Consequently, even if atomic energy becomes cheap, the overall savings would not be great.

Europe

Spain

Fernando De Los Rios, representative of the exiled Republican government of Spain, has a map showing the disposition of Franco's armed forces along the French border. It gives detailed information on the location of over 400,000 Spanish, German and African troops and the Spanish Foreign Legion. The map was compiled by the underground, resistance forces in Spain.

Between the Atlantic coast and the Mediterranean the fascist dictator has over 400,000 fully armed and equip-

ped men. They comprise 29 infantry divisions, 32 regiments of artillery, some tank battalions, units of motorized cavalry, a number of regiments of engineers and 3 air force formations. Included are 40,000 members of the Wehrmacht and several thousand French fascist militiamen. They are spread along 600 kilometers of frontier to a depth of 100 kilometers.

In addition there are units of the German Gestapo in Barcelona and the German security service (SS) installed in other parts of the country. The Falangist espionage service is under

the direction of Germans. De Los Rios plans to put this information before the UN Security Council.

It has been revealed by foreign correspondents that Spain is the haven for scores of key Nazi scientists and technicians who are working on atomic bombs and other war weapons. In April, Poland formally asked the United Nations to intervene in Spain on the ground that Spanish fascism is a world menace. Nothing has been done, except talk about it, up-to-date.
Scotland

The TVA idea is taking root in the highlands of Scotland. Plans to harness its untapped hydro-electric resources to provide power for farms, homes and industry are beginning to get under way. The North of Scotland, Hydroelectric Board is pressing the Government for priorities for two

systems. These are at Loch Sloy in Dumbartonshire and at Pitlochry in Perthshire. German prisoners of war and some Polish soldiers are at work building roads for the Loch Sloy project.

The two projects are expected to be in operation inside of three years. Four other projects are in the preliminary stages. These are at Loch Fannich in the County of Ross and Cromarty, at Cowal, on Skye Island, and in the Orkneys. The scheme calls for a grid that will distribute electric power all over North Scotland. The Hydroelectric Board is offering the enticement of exceptionally cheap power to attract industrial development. Lord Airlie, Chairman of the Board, states that other great water-power resources in the northern counties are still to be worked on.

'Thunders of Silence'

'Domestic consumers in TVA now use an average of 1,754 kilowatt-hours of current a year, as compared with the national average of 1,186. In 1945 TVA supplied 1/10 of all power used by war industries; it is the largest single integrated power system in the U.S. The War Department has revealed that "The ability of the TVA to supply abundant electric power was the major factor in locating one of the largest atomic energy plants at Oak Ridge, Tenn." Wartime industrial expansion greatly accelerated development in TVA; hydro-electric capacity in 1945 was 127% greater than it was in 1940.'—*Chicago Sun*, January 5, 1946.

T. V. A. delivers 12,000,000,000 kilowatts of power annually to 520,000 consumers, at an average cost of 1.85 cents per kilowatt-hour.

Ontario Hydro delivers 12,500,000,000 kilowatt-hours annually to 723,000 customers, at an average cost of 1.31 cents.

The industrial rate for energy from the Bonneville-Grand Coulee system is now 2 mills a kilowatt-hour.—*New York Times*, April 14, 1946.

The energy released by a single atom undergoing a radioactive change is about one million times as great as the energy released by a single atom undergoing chemical change.—Dr. James Franck of the University of Chicago in a radio talk December 16, 1945.

A male nurse in a mental hospital noticed a patient with his ear close to the wall, listening intently. The patient held up one finger as a warning to be very quiet, then beckoned him over and said: 'You listen here.'

The nurse put his ear to the wall and listened for some time, then turned to the patient and said: 'I don't hear anything.'

'No,' said the patient, 'and it's been like that all day.'

In the Question Box

Educate—Orchestrate—Operate

By Speakers Division, 8741-1

Engineers know matter and energy, but can they handle social problems? E.A.M.

The probabilities are that they can, provided they receive the same type of scientific training about social problems as they do about technical problems. When an engineer attempts to 'handle' social problems by political and other Price System methods, he usually makes as big an ass out of himself as anybody else. The reason is that he's using the wrong tools. One can't build a bridge, a skyscraper or a great industrial plant by juggling political and philosophical opinions. The job requires the application of scientific principles to the physical factors involved.

Neither can one work out the solution to social problems by juggling opinions; politicians, moralists and philosophers to the contrary notwithstanding. Their record belies their words. What social problems have they ever solved? The muddle-headed method of social control characteristic of the Price System for thousands of years was compulsory in the past because no better method could be devised under the ever-existing conditions of natural scarcity and lack of scientific knowledge. However, today, in North America, Price System methods are not only not compulsory, they are not even socially tolerable anymore.

This is because the nature of social problems has changed. In the past the major social problem was how to effect an equitable distribution of a natural scarcity. This is a political-

philosophical problem. The impact of technology and science has changed this to a technical problem of how to distribute an abundance. If this is correct, then all Price System attempts to solve social problems in North America are condemned in advance to futility. Since the problem is now a technological problem, it requires technological methods. Any alert, intelligent citizen can understand this. One does not have to be an engineer.

All this talk about turning over social controls to engineers is beside the point. It indicates, on one hand, a red herring thrown out by the status quo to scare people and muddy up the waters of social change. On the other hand, it indicates the possession of a 'fuhrer complex' on the part of those who expect the engineers to lead them to the Promised Land. A great many people have a desire to escape from the obligations of citizenship by foisting the responsibility upon one group. That's a good way to get sold out.

Technocracy has never advocated turning over social control to engineers, scientists or technologists. Minority rule is not the answer to America's problems. Technocracy stands for the adoption of technological PRINCIPLES of social control within the framework of a scientific design dictated by physical laws. Read and ponder that sentence well. It means that WE, THE PEOPLE, must adopt a BLUEPRINT OF SOCIAL OPERATIONS when the time arrives that the Price System can no longer function. Another point should be added here. Technocracy

has never advocated social change. Instead, it is PREPARING for that social change which is inevitable in North America.

Whether we will move forward into a New America of Abundance, Distribution, Security and Equal Opportunity, or backward into social fascism depends upon how well we understand the problem. Under the Price System most scientists and engineers are as muddle-headed and ignorant about how to solve social problems as politicians and business men in general. This does not detract from their great achievements in their own fields. Rather, it points to the fact that the methods of science must be extended from the purely technical field to cover the entire social field.

Because scientists, engineers, and technologists have been trained in the scientific method, they bear a great responsibility for its application to the social field. Also, because of their training, it is likely they can be of great service to North America when its darkest days arrive. It is for this reason alone that engineers, scientists, technicians, etc., occupy such an important place in the Body of Thought of Technocracy and not because they have been anointed by some special providence to pull our chestnuts out of the fire for us.

As you say, engineers know matter

and energy. Consequently, they can 'handle' social problems because in this industrial age these are primarily problems of matter and energy. However, it is not the engineer (in himself) that America needs. It is the *engineering method*. If you can stop thinking in terms of human struggles for power and begin thinking in terms of quantitative analysis, you will understand. One thing is certain; Price System methods and Scientific Methods are opposite to each other. We can't use Price System methods to install the New America. It has to be done with Scientific Methods. Fortunately, scientists, engineers, etc., have no monopoly on these methods. Most any one can use them.

Technocracy is the social aspect of Science. It has analyzed the Price System and synthesized a far better social entirety to replace it when it collapses. We suggest that you investigate Technocracy. Then, join the Organization, read its literature, and go through the Study Course. You will see that the great American problem is not one for scientists, engineers, etc. alone but for all Americans. Don't worry about the engineers. They'll fall in line when the time comes. If we take this as our motto, we cannot fail:

Join Technocracy Now

Under the Head of Progress

From 1850 to 1925, output of U.S. blast furnaces increased 7,000 per cent, while employment increased 50 per cent.—U.S. Bureau of Labor Statistics.

'Only one American in one thousand is really well fed in the sense that no further improvement could be made in his physical condition by changes in his diet.'—From *Your Red Cross*, a booklet

put out by the Chicago chapter of the American Red Cross.

'Half the men in our scientific laboratories still dream of patents and secret processes. We live today largely in the age of alchemists, for all our sneers at their memory. The "business man" of today still thinks of research as a sort of alchemy.'—H. G. Wells, in *Outline of History*, page 731.

A Last Salute

Following a long illness, Flora B. Crowther, the first member and Organizer of Technocracy Inc. in Ashtabula, Ohio, died on Saturday, April 27, 1946.

Attending the funeral services were members of the family and numerous friends. A delegation of Technocrats from Section 15, R. D. 8141, Cleveland, was present to pay their respects. The Director of 8141-15 made a few pertinent Technocratic remarks as a part of the ceremony. All the seven pall bearers were Technocrats in Gray.

Flora Crowther will be remembered in the New America for which she worked and taught.

She did her part well. She was a Functional Technocrat; which means that she lived up to the very highest concept of American citizenship. This is a great record to take along when one goes over the Great Divide and a great legacy to leave behind for those who still struggle to solve America's social dilemma.

Some Technocracy Section addresses in Great Lakes area

- 8040- 2—Box 356, Ambridge, Pa.
- 8040- 3—340 Brighton Ave., Rochester, Pa.
- 8041- 1—1613 East 51st St., Ashtabula, Ohio.
- 8141- 3—39 E. Market St., Akron, O.
- 8141- 4—2237 Front St., Cuyahoga Falls, Ohio.
- 8141- 7—P. O. Box 270, Barberton, O.
- 8141-14—P. O. Box 553, Kent, Ohio.
- 8141-15—10537 St. Claire Ave., Cleveland 8, Ohio.
- 8240- 1—207 N. Washington St., Gallion, Ohio.
- R. D. 8242—c/o John Reynolds, St. Clair, R. No. 2, Mich.
- 8341- 1—1430 Adams St., Toledo 2, Ohio.
- 8342- 2—112 N. Tasmania, Pontiac, Mich.
- 8343- 1—6717 N. Saginaw St., Flint, 5, Mich.
- 8439- 1—P. O. Box 81, Station A, Dayton, Ohio.
- 8741- 1—3178 N. Clark St., Chicago 14, Ill.
- 8743- 1—3546 N. Green Bay Ave., Milwaukee 12, Wis.
- 8844- 1—620 S. Broadway, Green Bay, Wis.
- 8844- 2—1011 W. College Ave., Appleton, Wis.
- 8844- 3—135 Van St., Neenah, Wis.
- 9038- 1—4518 Delmar Blvd., St. Louis, Mo.
- R. D. 9041—2428 13th Ave., Rock Island, Ill.
- R. D. 9140—18 N. 5th St., Keokuk, Iowa.
- 9344- 1—30 N. 10th St., Minneapolis 3, Minn.
- R. D. 9344—527 Wabasha St., St. Paul 2, Minn.
- 9439- 1—P. O. Box 209, Kansas City 17, Kan.
- 9648- 1—P.O. Box 178, Warren, Minn.
- R. D. 9737—4442 Bayley, Wichita 9, Kan.

TECHNOCRACY

NORTH AMERICA'S ONLY SOCIAL DYNAMIC

WHAT?

★ Technocracy is the only North American social movement with a North American program which has become widespread on this continent. It has no affiliation with any other organization, group or association either in North America or elsewhere.

★ The basic unit of Technocracy is the chartered Section consisting of a minimum of 25 members and running up to several hundred.

★ It is not a commercial organization or a political party; it has no financial subsidy or endowment and has no debts. Technocracy is supported entirely by the dues and donations of its own members. The widespread membership activities of Technocracy are performed voluntarily; no royalties, commissions or bonuses are paid, and only a small full-time staff receives subsistence allowances. The annual dues are \$6.00 which are paid by the member to his local Section.

★ Members wear the chromium and vermillion insignia of Technocracy—the Monad, an ancient generic symbol signifying balance.

WHERE?

★ There are units and members of Technocracy in almost every State in the U. S. and in all Provinces in Canada, and in addition there are members in Alaska, Hawaii, Panama, Puerto Rico and in numerous other places with the Armed Forces.

★ Members of Technocracy are glad to travel many miles to discuss Technocracy's Victory Program with any interested people and Continental Headquarters will be pleased to inform anyone of the location of the nearest Technocracy unit.

WHEN?

★ Technocracy originated in the winter of 1918-1919 when Howard Scott formed a group of scientists, engineers and economists that became known in 1920 as the Technical Alliance—a research organization. In 1933 it was incorporated under the laws of the State of New York as a non-profit, non-political, non-sectarian membership organization. In 1934, Howard Scott, Director-in-Chief, made his first Continental lecture tour which laid the foundations of the present nation-wide membership organization. Since 1934 Technocracy has grown steadily without any spectacular spurts, revivals, collapses or rebirths. This is in spite of the fact that the press has generally 'held the lid' on Technocracy, until early in 1942 when it made the tremendous 'discovery' that Technocracy had been reborn suddenly full-fledged with all its members, headquarters, etc., in full swing!

WHO?

★ Technocracy was built in North America by North Americans. It is composed of North American citizens of all walks of life, Technocracy's membership is a composite of all the occupations, economic levels, races and religions which make up this continent. Membership is open only to North American citizens. Aliens, Asiatics and politicians are not eligible. (By politicians is meant those holding elective political office or active office in any political party.)

★ Doctor, lawyer, storekeeper, farmer, mechanic, teacher, preacher or housewife—as long as you are a patriotic North American—you are welcome in Technocracy.

**Great Lakes Technocrat,
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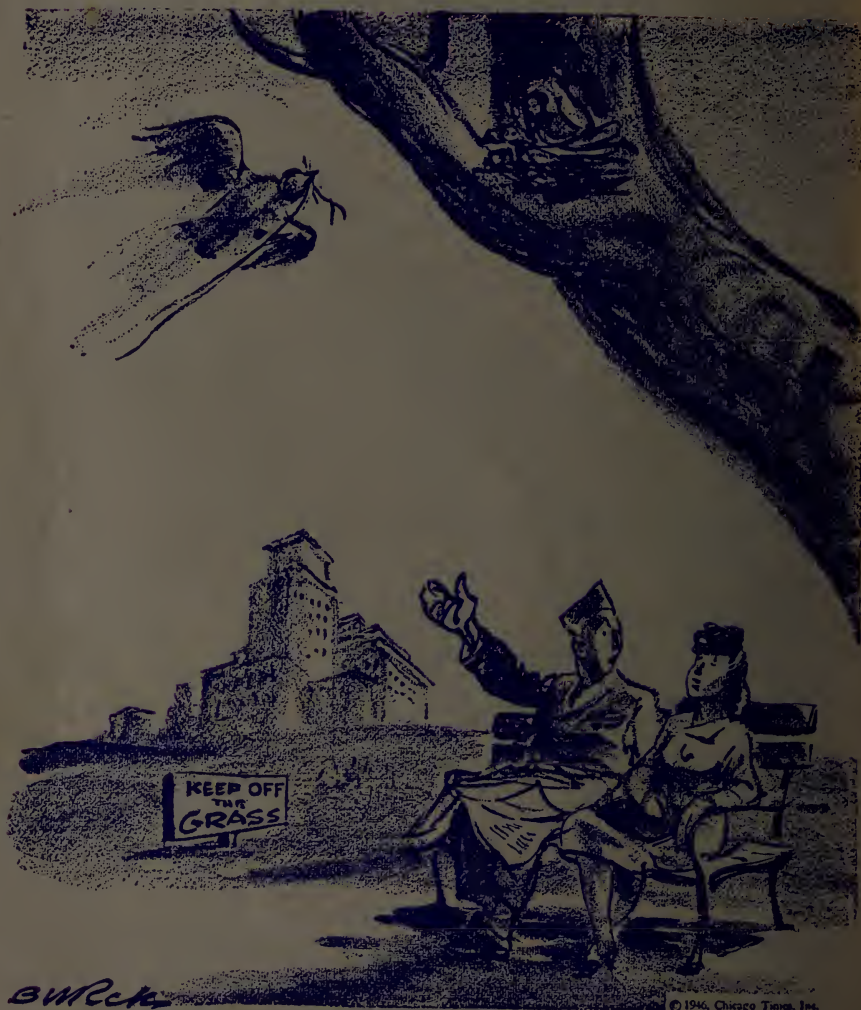
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"Funny—they just go ahead and build!"